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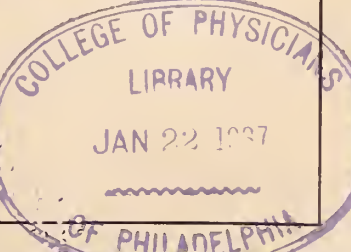
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A SYMPOSIUM

The Ketogenic Treatment of Bacilluria*

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Dr. Clark:

Urology as one of the newer fields of specialization in medicine made a most brilliant record during its adolescent years. Embracing as it does both the surgical and medical branches of medicine, the major portion of this advance was on the surgical and diagnostic sides, the latter aided by many ingenious instruments enabling greater visualization of the urinary tract.

Until as recently as five years ago little advance in medical therapy had been made. Attempts by numerous pharmaceutical houses to displace the old standby, methenamine, had resulted in dyeing the urine almost any color in the rainbow with no appreciable effect in inhibiting the growth of organisms infecting the urinary tract.

Five years ago the ketogenic diet was first prescribed for a patient in an effort to control a most resistant recurrent infection of bladder and kidneys. During the previous fourteen months every type of therapy known at that time had been used to combat the infecting organism, without success. The ketogenic diet permanently eliminated the infection in twelve days. Since that time the result achieved in that one case has been the initiating source of

many experiments and investigations. In an evaluation of my first two hundred cases while I was associated with Mayo Clinic, it was found that this treatment was successful in approximately two out of three instances where formerly other types of therapy as evaluated by Campbell, produced results in only one out of six cases. Helmholtz found that the ketogenic treatment was even more successful in children. Acidosis and ketosis are produced with greater ease in children because apparently they have very little glycogen supply in the liver. Acidosis is much more difficult to produce in adults.

Fuller of London then discovered that it was the beta-hydroxybutyric acid excreted in the urine by this altered dietary intake which inhibited the growth of the infecting organism. It had been recognized early that in addition to the change in diet, an increased acidity of the urine was an important factor in successful treatment. Several authors then reported numerous experiments to show that bacterial growth in the urinary tract would be inhibited by a concentration in the urine of 0.5 per cent beta-hydroxybutyric acid and an acidity of the urine of pH. 5.2.

At that point two years ago an evaluation of the treatment showed that the scope was limited. Many suffering from a pyelitis or cystitis were unable to obtain

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careful and exact dietetic supervision such as provided in hospitals or diet kitchens. Clark and Keltz suggested a simplified method of dietary regimen applicable to office practice, in which the food intake consisted largely of forty per cent cream and eggs. The drawback to this simplified method is the gastro-intestinal upset which accompanies such an abnormal dietary intake. However, the advantage is that the course of treatment is shortened and hence the expense involved both as to time of medical supervision and dietary cost is minimized.

Nesbit of Ann Arbor then suggested applying the acidosis and ketosis produced by a starvation diet, to the treatment of urinary tract infections. In a series of two hundred case histories he has shown remarkable results with a ketosis produced in this manner. The disadvantage of the starvation method is the length of time necessary to obtain a ketosis sufficient to achieve satisfactory results. At the state hospital where his suggestion is widely used, expense is not a controlling factor, but in a private office practice the economic consideration is of great importance. The advantage gained in the starvation ketosis is the comfort of the patient. Nesbit maintains that after the first forty-eight hours there is a little discomfort due to hunger.

So today, in combatting infections of the urinary tract, we have a simplified ketogenic diet, an elaborate ketogenic diet and a starvation ketogenic diet, each with its particular advantages but all producing results in medical urology hitherto not achieved.

Dr. Everett:

Dr. Clark and his associates have pointed out practical applications of the ketogenic diet of great interest to the biochemist. In considering infections and calculi of the urinary tract we must not neglect the role of the epithelial tissues which provide the medium for the invading organism. The metabolic response of these tissues to diet and medication is an integral part of the problem of bacteriostasis.

I have been interested in explanations advanced for the failure of the ketogenic diet in some cases and in the fact that certain patients will not develop the desired ketonuria. A number of organs are

known to be concerned in the development of ketonuria. The liver is the primary ketoplastic center, but the kidney, pancreas, adrenal and pituitary glands are also involved. The liver ketogenesis varies individually and by species and is subject to the controlling influences of hormones, asphyxial states and disease. Hepatic ketogenesis results in the formation of acetoacetic acid, which is then transformed into the desired B-oxybutyric acid. Last year Edson³ demonstrated that ketogenesis is markedly increased in the isolated liver by perfusing it with ammonium chloride. This substance not only increased the ketogenesis from fats; it also caused a synthesis of acetoacetic acid from acetic acid. To my mind, this provides an additional reason for the success of ammonium chloride when used as an adjuvant to the ketoplastic diet. Some have advocated the administration of pure acetoacetic or B-oxybutyric acids in place of the ketoplastic diet, but, aside from their expense, it has been shown that they give rise to no greater ketoneuria than can be produced by diet.⁴

The kidney is not a negligible ketonuric factor, for Snapper and Brunbaum⁵ have shown that it destroys large amounts of B-oxybutyric and acetoacetic acids. In addition to this destruction, it has a way of excreting these substances irregularly. In recent years we have come to recognize the adrenal glands and the anterior lobe of the hypophysis as ketoplastic endocrine influences. Injected anterior pituitary hormone increases ketonuria on a high fat diet, but especially during starvation, when it may be increased many fold.⁶ Funk claims that normal urine contains another ketoplastic hormone.⁷

Such physiological factors are no doubt concerned in the resistant clinical cases and their careful evaluation may lead to additional therapeutic advance. Dr. Clark has indicated that the modern therapeutic agents for urinary infections produce two common results, namely, ketonuria and aciduria, both of which he considers essential for the clinical control of the infection. I believe there is an unsuspected third factor, less obvious, but possibly important. Ketogenic treatment not only minimizes glucose oxidation, with its resultant ketosis; it also restricts drastically

the available supplies of carbohydrate in the tissues, including those of the genitourinary tract. Many details of the metabolism of urinary epithelial tissues are obscure, but it is not difficult to visualize definite metabolic relations between these host tissues and the invading micro-organism. We are well acquainted with the encouragement provided to such bacteria by the carbohydrate-rich tissues of the diabetic. Many bacteria have a great preference for carbohydrate food and flourish upon it. Recent investigations⁸ have shown that *escherichia coli*, the organism most responsive to the ketogenic diet, increases its growth more than three hundred per cent when glucose is added to its anaerobic medium. Under the same conditions, approximating those of the urinary tract, glucose greatly accelerates the basal metabolic rate, and presumably the vigor, of the micro-organism. The possibility that carbohydrate deprivation of the urinary epithelium is an important factor in the ketoplasmic treatment of urinary infections should not be overlooked.

Dr. Moor:

The chemical agents employed in combatting infections are classified but the classification like practically all others is unsatisfactory. The terms disinfectant and antiseptic came into use before the nature and activities of bacteria were known. Today we classify these chemical agents as follows:

A disinfectant is a chemical agent which under certain conditions of time, temperature, ionization, concentration and environment frees from infection. The terms germicide and bactericide are synonymous.

An antiseptic is a chemical agent which under similar conditions opposes sepsis, putrefaction or decay by preventing or arresting the growth or action of micro-organisms. Bacteriostatic and preservative are synonymous with antiseptic.

A deodorant is supposed to merely mask odors but at the same time may act as a disinfectant or antiseptic. Because of this overlapping of action between the various classes there is much confusion in the use of these terms.

Experimental evidence to date indicates that the action of ketone bodies, especially beta-hydroxybutyric acid, on micro-organ-

isms infecting the urinary tract is essentially bacteriostatic provided a sufficient degree of acidity is also present. It is impossible to draw any hard and fast line between the bactericidal and bacteriostatic action of chemicals. In general, pathogenic micro-organisms deprived of their power of reproduction cannot long endure in living tissue, hence a bacteriostatic agent will usually produce the same results clinically as will a bactericidal one. Theoretically of course a bactericidal agent produces results in a shorter time.

It is also true that there are certain species of pathogenic micro-organisms that will hibernate in living tissues for long periods of time. For example, *Bacillus tuberculosis*, *Treponema pallida*, and *Neisseria gonorrhoea* after lying dormant some times for years will suddenly acquire renewed life and activity. This will explain the recurrence of an infection that has been treated with bacteriostatic agents only.

Infection and the persistence of infection is dependent upon various factors such as the number and virulence of the micro-organisms invading the host, the external and internal defenses which the host is able to mobilize, the portal of entrance and a long list of predisposing causes such as age, race, heredity, occupation, social environment, etc.

I have followed Dr. Clark's work in connection with ketogenic diets with great interest. The Department of Bacteriology in the State University Medical School has been very happy to cooperate with Dr. Clark in carrying out bacteriological tests on urine obtained from individuals taking the ketogenic diet. The encouraging results obtained by Doctors Clark and Keltz with this form of treatment and the close correlation of their results with those of other recognized authorities certainly warrants its careful study by those in the medical profession vitally concerned.

Dr. Jacobs:

I am not a urologist, but a medical man. However, I have been interested in the use of a ketogenic diet not only in epilepsy but in the condition of bacilluria. I am confident that the advocacy of this diet by Clark and Helmholtz has been a definite forward step in treating this resistant

urinary infection. The literature now has many confirmatory reports of the success of this treatment.

It is a proven fact that the beta-hydroxybutyric acid is the bacteriostatic factor in the urine. However, ketosis alone is not sufficient to inhibit the growth of the bacilli, but an added factor of sufficient urinary acidity is necessary. It has been found that a hydrogen ion concentration of around 5.0 is essential. Ammonium chloride by mouth in divided doses of six grams daily has been a helpful adjunct in obtaining this acidity. The ammonia is presumably converted into urea so that actually hydrochloric acid is produced. These six grams of ammonium chloride furnish over 1000 cc. of 0.1 normal hydrochloric acid.

Patients often have difficulty with the diet, as nausea and vomiting are not infrequent, yet the results obtained more than compensate for this handicap. However, patients who already have impaired digestion such as accompanies gall bladder disease find the excessive fat intake almost impossible. Because of the marked gall bladder contraction that follows a fat meal I have often wondered if it might be possible to squeeze a stone from the gall bladder into the cystic or common duct.

There is another problem that remains to be solved and that is how can the obese patient be kept in ketosis. It is not infrequent to find that a fat patient having developed acidosis will slip right out of it even though the diet has been strictly followed. This may be due to the large glycogen supply in the liver of these individuals. In children, for instance, acidosis is easily produced, apparently because they have a small glycogen supply.

The cream and egg diet of Clark and Keltz is easily prescribed in the office but difficult to adhere to. I wonder if it would not be possible and practical to have a set of standardized diets in accurate household measures, so they would not have to be weighed, that could be given to the patient. Because there is less difficulty when a ketogenic diet is approached gradually, one could have the first diet contain 80-90 grams of carbohydrate and by changing the diet every three days gradually reduce the carbohydrate content to fifteen or twenty grams. This would

take three or four diets and consume a longer period of time, yet might it not be worth while?

Mrs. Sewell:

The following examples of the different types of ketogenic diet may be of aid to those prescribing this type of therapy. In addition to the diets, it is of great importance that the instructions to the patient should be carefully followed.

ELABORATE KETOGENIC DIET

Diet consisting of large quantities of fat, minimal carbohydrate, and adequate protein. The plan is effective, as ketosis is produced, but the diet has its disadvantages in that the large amount of fat included makes it unpalatable, often severely nauseating the patient. Hospitalization for diet kitchen facilities is almost a necessity for obtaining results with this plan.

A sample day's menu, for a diet of a FA/G ratio of 4:1, follows:

*Calories 2764, Protein 43, Fat 280,
Carbohydrate 18*

BREAKFAST

Egg, fried—One
Bacon—4 strips 6" long
Bran Wafers—As desired
Butter—2 tablespoons
Heavy Whipping Cream—1/4 cup
Coffee or Tea—If desired

LUNCH

Soup { Heavy Whipping Cream—3/4 cup
Tomato—1/2 cup
Seasoning
Salad { Hard Cooked Egg—One
on Lettuce Leaf—One
Oil Mayonnaise—2 tablespoons
Bran Wafers—As desired
Butter—2 tablespoons

DINNER

Roast Pork—3"x4"x1/4"
Creamed Cauliflower
Cauliflower—1/2 cup
Heavy Whipping Cream—1/4 cup
Lettuce Salad—1/2 cup
Oil Mayonnaise—2 tablespoons
Bran Wafers—As desired
Butter—2 tablespoons

SIMPLIFIED KETOGENIC DIET

In some cases where it is difficult to obtain a variety of foods, very satisfactory results have been obtained from the simple prescription of taking daily, *one and one-half pints of heavy whipping cream and six eggs*. The diet being so simple, the physician has no difficulty in explaining

it in his office, and the patient can easily follow it at home. The plan has the same drawback, however, as the Elaborate Ketogenic Diet, in that the patient often suffers from a gastro-intestinal upset.

Any combination of two eggs and one cup of cream may be made each meal. If desired, some cream may be saved from the meal to be used between meals with coffee or tea.

Following are simple suggestions for meals, including the necessary eggs and cream, for one day. Butter and seasoning may be used as desired to make the diet palatable:

Calories 2676, Protein 14, Fat 288, Carbohydrate 22, FA/G=4.5 to 1

BREAKFAST

Scrambled Eggs
Eggs—Two
Heavy Whipping Cream—3/4 cup
Bran Wafers—As desired
Heavy Whipping Cream—1/4 cup
Coffee or Tea—As desired

LUNCH

Poached Egg—One
Baked Custard or Custard Ice Cream
Egg—One
Heavy Whipping Cream—1 cup
Water—1/4 cup
Nutmeg and Saccharin—If desired
Bran Wafers—As desired

DINNER

Egg Omelet
Eggs—Two
Heavy Whipping Cream—1/2 cup
Bran Wafers—As desired
Iced Coffee
Coffee—As desired
Heavy Whipping Cream—1/2 cup

STARVATION KETOGENIC DIET

This diet eliminates the feeding of large quantities of fat given in the usual ketogenic diet. It consists of a short period of *underfeeding*, giving the same low carbohydrate and adequate protein as in the other diets, but allowing only enough fat to make the diet palatable. The patient thus uses his body fat to make up the deficit in calories, and ketosis results the same as in giving large quantities of food fat. This diet has the advantage of being more palatable and consequently easier for the patient to take.

A sample menu for a diet of this kind follows:

*Calories 702, Protein 43, Fat 50,
Carbohydrate 18*

BREAKFAST

Orange—One-half of a small orange
Poached Egg—One
Crisp Bacon—Four strips 6" long
Bran Wafers—As desired
Butter—1 level teaspoon
Coffee or Tea—If desired

LUNCH

Spinach—1/2 cup
with
Hard Cooked Egg—One
Lettuce and Tomato Salad—1/2 cup
Mineral Oil Mayonnaise—If desired
Bran Wafers—As desired
Butter—1 level teaspoon
Whole Milk—1/2 cup

DINNER

Roast Beef—3" x 2" x 1/4"
String Beans—1/2 cup
Shredded Lettuce—1/2 cup
Mineral Oil Mayonnaise—If desired
Bran Wafers—As desired
Butter—1 level teaspoon
Tea—If desired

IMPORTANT INSTRUCTIONS

1. Eat no sugars or sweets of any kind.
2. Coffee, tea, condiments may be used as desired.
3. Bran wafers must have no food value.
4. Any three per cent vegetable may be used where vegetables are listed on diet.
5. Do not chew gum or tobacco. Smoking is permitted.
6. Water should be taken only in moderate amounts.
7. No cathartics are to be used, other than mineral oil or bitter cascara. Milk of magnesia or other sweet cathartics will cause failures. Take no medicine unless prescribed by the physician.

Dr. Clark (closing):

Experience in handling a patient for which the ketogenic treatment has been prescribed is absolutely essential to obtain satisfactory results. In nearly every instance, the patient will have considerable gastro-intestinal discomfort and upset. Assurance from the physician that this is not unusual and the knowledge by the physician as to how far it is advisable to force the treatment when these upsets occur is only acquired by experience. The necessary microscopic examinations of the urine and the chemical tests to determine the extent of the bacteriostatic effect pro-

duced by the diet have been explained in the other articles on this subject.

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ORAL ROENTGENOLOGY*

EDWARD D. GREENBERGER, M.D.
McALESTER

Oral roentgenology and oral disease have received but little attention in the past by the general roentgenologist, general practitioner and surgeon. Most physicians admit their lack of interest in anything not grossly visible in front of the anterior pillars. This attitude is probably due to the insignificant place that oral diseases occupy in the curriculum of most medical colleges. The physician has always dissociated himself from denistry. It is well for us to recall occasionally a remark made by Dr. Charles Mayo: "Talking of the interdependence of medicine and dentistry is like talking of the interdependence of medicine and surgery or medicine and obstetrics. The practice of medicine includes dentistry and dentistry is a special branch of medicine."

This wide dissociation, unfortunately, exists also between the dental x-ray service and the general x-ray departments of all the larger hospitals. The interne or fellow in roentgenology completes his course of training in x-ray without knowing anything about radiodontia, or about the technic in taking x-rays of the teeth. I know this to be true in my case. When I was later placed in charge of roentgenology in a clinic where the doctors frequently asked for a dental check-up by x-ray, I was forced to take an interest in radiodontia. And when some of the local dentists began to seek my opinion about some of their films, I was forced to take an authoritative stand in radiodontia. By asso-

ciation with dentists experienced in dental roentgenology, I was able to get by very nicely. Very few of the dentists in practice today have received any instruction in taking or reading x-rays of the teeth, other than that received from their journals, post-graduate study, and experience. Only one dental school in the United States, the University of Pennsylvania, requires its graduates to demonstrate their knowledge of taking and reading dental films. Only one-third of the dentists in practice have their own x-ray outfits. Most dentists are restricted in the use of x-ray to the scope of the small dental film because of their limited training and the special construction of the dental outfit. The majority of dentists therefore expect the general roentgenologist to take an authoritative stand on oral roentgenology, and it is to our advantage to accept this position.

The most common and often the only lesion the general roentgenologist looks for or comments on, when reading dental films, is the presence or absence of periapical destruction. If we are to take our place in dental roentgenology and if we are concerned with the prevention of oral infection and diseases, we should look for more than translucent apical lesions in dental films. Caries, pyorrhea alveolaris or peri-odontoclosia, pulpless teeth, pulp degeneration and pulp stones, sclerosis of the roots, fractured teeth or broken crowns and retained roots should be reported to the physician or dentist and the patient

*Read before the Section on Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

then referred to the dentist for treatment. We should urge the removal of impacted and unerupted teeth when found, not only because such teeth are often the source of neuralgic pains and are factors in malocclusion of teeth, but because they frequently cause a chronic inflammatory reaction in the surrounding supporting tissues by acting as foreign bodies. The tissues around such teeth were proven by cultures to be carriers of pathogenic organisms in an investigation of more than six hundred cases. If the dental film reveals a congenital absence of a tooth, we should inform the patient or his physician of the importance of retaining the deciduous tooth. The importance of looking for, correcting, and preventing the above mentioned dental lesions is forcefully illustrated by the statistics recently published by the Dental Department of Mayo Clinic.¹ In their survey at the University of Minnesota in which the mouths of about 10,000 adults were examined, it was shown that twenty per cent of females and thirteen per cent of males had lost all their teeth at the age of forty. Forty-seven per cent had lost their first molars before the age of twenty years. In their survey of several hundred cases referred to the dental department routinely they found that:

1. Every other person had at least one pulpless or infected tooth.
2. Three-fourths had pyorrhea to an advanced stage.
3. Sixty per cent had carious teeth.
4. Retained roots were found in one of five patients; one in three in the edentulous patient.
5. Ten per cent had impacted teeth often associated with infection.

A word about technic. Quite a bit of skill and repetition is often required to produce dental films that do not show haziness or distortion or superimposed shadows, particularly in the examination of upper teeth. Recently, in the examination of the upper molars in a patient who had sustained a severe injury to the face, I made a diagnosis of fracture through an unerupted third molar. The dentist could find no suspicious signs of such lesion clinically. I re-rayed the patient, angulating my tube towards the orbit. The film now revealed a fracture through the maxilla and not an unerupted tooth.

All of you have encountered the problem in diagnosis in determining whether the translucent area at the apex of an upper molar is due to abscess, normal superimposed maxillary sinus, or a maxillary cyst. Lipiodol instillation into the maxillary sinus by direct injection or by the displacement method of Proetz, is sometimes required before a final diagnosis can be made. The number of dental films used should not be determined by the capacity of the film mount. Fourteen films is the minimum for a full set of teeth; more films when special studies are required. The occlusal film is often very helpful in obtaining a better orientation of the tooth or the lesion that is being examined to its surrounding structure. (Demonstration.)

A discussion of the importance and the use of the x-ray in the diagnosis of intra- and extra-oral lesions beyond the scope of the dental film, includes the following interesting subjects:

1. Soft Tissue Swelling.
2. Osteomyelitis of the Jaws.
3. Tumors of the Jaw.
4. Sialography.
5. Fractures.

SOFT TISSUE SWELLING

As already mentioned, the most common oral condition in which the physician seeks the aid of the roentgenologist and dentist is in the examination of the teeth as a possible source of infection, as in various arthritides, nephritis, neuritis, rheumatic fever, sinus infection, ocular infections, unknown fevers, and other systemic disturbances. The next most common condition in which the roentgenologist is called in consultation is in the determination of the nature or cause of the soft tissue swelling within and around the upper and lower jaws. Many physicians have the tendency to refer such patients immediately to their dentists. The good internist, however, gives such a case its due importance and considers the following possibilities:

A. General causes:

1. Blood dyscrasias — myelogenous and lymphatic leukemia, agranulocytic angina, infectious mononucleosis.

2. Hodgkins Disease including lymphosarcoma.
3. Michulicz's Disease or syndrome.
4. Lymphatic tuberculosis.
5. Nephritic and cardiac lesions, allergic skin manifestations, trichinosis, that cause swelling of cheeks and eyes.
6. Metastatic cervical nodes from malignancy of esophagus, respiratory tract, stomach, uterus, etc.

B. Local causes:

1. Infection of the tonsils, ears, salivary glands with cervical enlargement.
2. Infection of nasal accessory sinuses.
3. Stomatitis, gingivitis and pyorrhea as the result of infection and:
 - (a) metallic poisoning as mercury, arsenic, bismuth and lead;
 - (b) deficiency diseases as pellagra, sprue, pernicious anemia;
 - (c) oral localization of a skin lesion as lichen planus, erythema multiforme, pemphigus.
4. Localized skin infection as erysipelas, beginning carbuncle, cellulitis, herpes zoster.
5. Ludwig's Angina.
6. Mumps.
7. Thyro-glossal cyst.
8. Secondary to specific ulcers in mouth and jaw as actinomycosis, tuberculosis, syphilis.
9. Cysts and soft tissue tumors of the mouth as ranula, epulis, salivary gland cyst.
10. Epithelial tumors of salivary gland:
 - (a) benign adenoma;
 - (b) malignant adenoma;
 - (c) mixed tumor, chiefly of the parotid.
11. Primary carcinoma of structures of mouth, sinuses, naso-

pharynx, with or without cervical metastases.

12. Bone tumors and infections.

The x-ray in many of the above lesions is of negative value. But how simplified this complex problem of diagnosis of the nature of soft tissue swelling becomes if the x-ray does disclose a salivary calculus, calcification of cervical gland, infected sinus, infection of the mastoid, infected teeth or bone changes of the jaw.

OSTEOMYELITIS

Osteomyelitis of the jaw is eighth in frequency of osteomyelitis in other parts of the body. Trauma, due to dental operations or external violence (fracture), are first in importance in etiology of osteomyelitis of the jaws. The procedure of curetting or packing a peri-apical abscess after the extraction of the involved tooth is a very frequent cause of osteomyelitis. A spontaneous extension of the infection from a peri-apical abscess into bone tissue of the jaw is uncommon. The hematogenous origin of osteomyelitis of the jaw occurs often enough to make us consider this source more often than we do.

The x-ray findings in osteomyelitis of the jaws are the same as in long bones. Prior to about the tenth day, x-ray is of negative value. After the tenth day of the infection, x-ray reveals irregular areas of necrosis or rarefaction and condensation, the amount of each depending on the acuteness or chronicity of the infection. Because of the thinness of the jaw bone, the inflammatory process often quickly finds a point of exit and drains often without operative interference.

In osteomyelitis of the maxilla in nurselings and infants, the course is modified by the fact that the maxilla of the infant is composed of a greater proportion of cancellous bone with numerous tooth buds, some of which lie close to the orbit. A diagnosis by means of x-ray is often difficult due to the normal translucent areas of the tooth buds. An intra-oral film is the most helpful. The clinical picture in most of these cases is characteristic. The infant becomes acutely ill, develops marked swelling of lids of one eye, swelling and softening of the upper gums and palate on the same side, and often purulent conjunctivitis and nasal discharge. Death occurs

in one-fourth of the cases. The course, otherwise, is as in the adult.

The complications of osteomyelitis or any infection of the jaw, particularly the maxilla, are conditions which every physician dreads. They make us realize the importance of proper treatment in lesions of the face and mouth. The list of such complications include phlebitis of facial veins with subsequent cavernous sinus thrombosis, meningitis, encephalitis, brain abscess, orbital abscess, empyema of antrum, etc.

TUMORS OF THE JAW

I'd like to discuss oral tumors briefly from a roentgenological standpoint.

1. The first in importance and frequency is the large peri-apical abscess.
2. The next most frequent tumor is the granuloma, the sequel of acute periodontitis in which the intense inflammation has subsided with formation of a nodule of chronic granulation tissue. The tumor usually reaches to pea-size. X-ray shows the same translucent area at the apex of the tooth as in the apical abscess.
3. The third most frequent tumor is the dental cyst, which is really a cystic degeneration in a granuloma. These cysts expand the bone as they grow and may reach huge size. They are symptomless, slow growing tumors, occurring at any age and found most frequently about the bicusps and molars. A characteristic roentgen finding of the dental cyst is that it expands about the apex and not around the crown as occurs in dentigenous cysts.
4. The adamantine epithelioma, next in frequency, is considered a true neoplasm. It arises from enamel organs, the usual site being around the molars. They occur at the age of the second dentition; they are very slow and painless in their growth. The tumor may be solid with small cystic areas or may be polycystic and attain huge size. The solid and more malignant type usually occurs in the upper jaw, the polycystic type usually in the lower jaw. The x-ray shows a central expansive bone lesion with

clearly demarcated outline, solid, mono- or polycystic in appearance. The solid or monocystic adamantinoma can not be differentiated from other central tumors by x-ray. Single intensive x-ray irradiation to the tumor followed by radical excision is the accepted treatment.

5. The dentigenous cyst occurs in about one to thirty in frequency in oral bone tumors. It is the benign prototype of adamantine carcinoma. It is a cystic degeneration of enamel organ. It occurs when a tooth, corresponding to abortive enamel organ, fails to erupt, leaving a vacant space in alveolus. These tumors are also painless, slow growing and may reach huge size. X-ray reveals the non-erupted tooth or teeth, as many as two hundred, varying in size from a bit of enamel to a fully developed crown lying within the cystic cavity. The roentgen findings do not exclude giant cell tumor or adamantinoma. The cyst is easily removed at operation by stripping its epithelial lining.
6. The giant cell tumor presents the same characteristics as it does in the long bones of the body, i. e., a central, clearly demarcated bone-expansive lesion, which, when large, reveals trabeculation. It may contain teeth and therefore x-ray does not differentiate it from the above tumors. X-ray therapy is of value as in giant cell tumors elsewhere, but the uncertainty of diagnosis makes us hesitate to use it entirely.
7. Odontoma is a rare lesion, occurring almost always in the lower jaw. It appears on the x-ray film as a solid tumor. It is composed of more or less formed teeth surrounded by a fibrous capsule.
8. Other primary bone tumors are very rare, as ossifying fibrous sarcoma, chondro-sarcoma, etc.
9. A common, very malignant tumor which we often forget in our classification of oral bone tumors, is cancer of the maxillary sinus. X-ray shows marked cloudiness in the antrum in early cases, bone destruction of surrounding structures in the

late cases. Early diagnosis is made by biopsy.

Another important group of oral bone tumors or bone lesions are those that occur secondary to local or distant malignancies or as a manifestation of some general osseous involvement as:

1. Local extension from oral malignancy.
2. Metastatic areas from a distant osteogenic sarcoma, from cancer of the prostate, etc.
3. Multiple osteitis fibrosa cystica, multiple myeloma.
4. Secondary to leukemic invasion, Gauche's disease, etc. (Demonstration.)

SIALOGRAPHY

A phase of oral roentgenology which has received a good deal of attention lately by both dentists and surgeons is sialography, literally translated, meaning salivary picture. Technique is as follows: one cc. lipiodol is injected into Stenson's duct and lateral radiogram is immediately taken, head of patient being fully extended. Its chief uses are:²

1. To determine presence or absence of non-opaque calculi in Stenson's duct.
2. To determine pathology in the duct or any of its branches and alveoli.

X-ray studies show various stages in chronic parotitis:

First stage: Parotitis resulting from blood stream infection. X-ray of both sides reveals dilation of Stenson's ducts.

Second and third stages are chronic parotitis from infected foci in mouth. The stoma of Stenson's duct in these cases shows an angry granular stomatitis and pus exudes from stoma on pressure of parotid gland. Sialograms of both glands show slight but definite dilatation of smaller ducts.

Later stage: As a result of long standing chronic infection, the terminal ductiles are so dilated that they appear on x-ray as spheroidal spaces and they resemble perfectly the dilatation of terminal bronchioles in bronchiectasis of the lung.

(Demonstration.)

ROENTGENOLOGICAL CONSIDERATIONS OF FRACTURES OF JAWS, PARTICULARLY THE MANDIBLE

Fractures of the jaw are much more common than usually supposed. In relation to fractures of other bones of the body, they rank one to nine, i. e., considering both the maxilla and mandible. The outstanding cause is still the blow from the fist, the frequency being fifty-five per cent as compared to ten per cent due to automobile, according to Cook County Hospital statistics. Dr. Donaldson in his survey of mandibular fractures at Mercy Hospital, Ann Arbor, Michigan, presents the following data on location of fractures:

- A. Angle—Forty-four percent.
- Mental Foramen—Thirty per cent.
- Symphysis—Nine per cent.
- Molar—Nine per cent.
- Neck of Condyle—Seven per cent.
- Condylod Process—One per cent.

In the maxilla, the majority of fractures occur in region of the incisors and bicuspids.

- B. Single Fractures—Sixty-eight per cent.
- Double Fractures—Thirty-one per cent.
- Triple Fractures—One per cent.

Of all the double fractures, seventy-seven per cent are of the mental foramen on one side and the angle at the opposite side. In view of the frequency of double fractures, it is surprising how often x-ray examinations are made of only one side.

The x-ray, of course, is a necessity in the correct management in any fracture of the jaw—to determine the location and type of fractures, to determine whether any infected tooth is in the line of fracture which may necessitate extraction to avoid an osteomyelitis. And after reduction of the fracture by wiring, or rubber bands, intra-oral molds or splints, jaw casts, etc., to determine whether fragments are in opposition, whether teeth are in proper position, to note onset of infection, secondary involvement of tooth roots and sequestrum formation, and to observe whether union is normal or delayed.

We all realize that surgical care of the jaw fractures is primarily the task of the

dentist and oral surgeon, and when attempted by others not versed in the care of the mouth and teeth or mechanics of mastication, the probability of obtaining a good result is extremely slight. Union of fragments is not the primary consideration in jaw fractures. Occlusion of the teeth is the criteria for good alignment of the fragments and often is a more exact guide than the x-ray film. In fractures through the angle and ascending ramus, for example, the x-ray may show malposition of the posterior fragment, but this is of little importance as long as the occlusion of the teeth is corrected. A good concise paper on surgical management of fractures is one written by Dr. Moonhead in May, 1934, issue of the *Journal of A. M. A.*

Concerning the length of immobilization of jaw fractures, most text books state three to five weeks. Dr. Dean, a surgeon dentist, states that forty-three days are required for the normal case, two to three times as long a period is required in those having systemic disturbances. The best criterion, however, is when the doctor believes good fibrous union to have occurred. Mechanical contrivances (wiring) continued longer promote additional resorption of bone. A roentgen examination subsequent to fixation merely shows the apposition of fragments and is usually not to be trusted in the early stage to determine the amount of union. Firm clinical union often precedes by several weeks any roentgen evidence of union. In this respect the healing of fractures of the jaw is dissimilar to healing of fractures in long bones.

(Demonstration.)

TECHNIQUE IN VISUALIZING FRACTURES OR TUMORS OF THE MANDIBLE:

1. Oblique view—Patient lying on table; head inclined downward on fifteen degree angle board, tube tilted from behind the shoulder.
2. Lateral view.
3. Vertex-chin position for an A. P. view of the lower jaw, or by the use of the occlusal film, for A. P. view of the upper jaw.
4. A. P. view—Nose and chin on plate, an important view to localize fractures of maxilla, zygoma, and orbits.
5. Oblique view—Nose, chin, zygoma

position for maxilla fractures in region of the molars.

6. Stereoscopic lateral views.
7. An important technique, not used enough in fracture work is the intra-oral technique, used chiefly to locate fractures at symphysis. An occlusal film is placed between the mandibular and maxillary teeth—patient on back, head lowered on incline, tube centered under chin and parallel to lower incisor teeth.
8. Another useful view used in locating fractures of the condyloid process is that used in x-ray of the mastoid. Patient is placed on fifteen degree angle board, lying on involved jaw, head up, tube focused just above opposite condyle. It is useful also in determining ankylosis of temporomandibular joint due to infection or following fracture of condyle. Films are taken with mouth open and closed.

CONCLUSION

The general roentgenologist has and is offered the opportunity to take the authoritative position in radiodontia if he would but take more interest in this field. The importance of early detection and correction of dental diseases has been stressed.

An outline of some of the many conditions that may be responsible for soft tissue swelling in and around the jaws was presented. The complexity in diagnosis of such conditions warrants the simple procedure of an x-ray examination in the hope of obtaining a positive finding.

Any infection around the jaws must be regarded with a good deal of respect because of the possible serious cerebral complications. Osteomyelitis, particularly of the maxilla, is therefore a serious problem. Trauma is the chief etiological factor.

In regard to central bone tumors of the jaw. Dental root abscess, granuloma and small dentigenous cyst can be differentiated from other tumors and often exactly identified by x-ray. Monocystic lesions larger than three cm. can not be differentiated by x-ray. A polycystic tumor may be caused by any of the central tumors, but most often by an adamantinoma or giant cell tumor.

Sialography is an interesting study that should be used more frequently by the general roentgenologist.

Lastly, in regard to fractures of the jaw. The good occlusion of the teeth is the criterion of a good reduction. The proper treatment of jaw fractures should therefore be in the hands of the dentist or oral surgeon. Clinical union of jaw fractures

occurs long before roentgen evidence. The importance of obtaining good visualization of the entire jaw on both sides has been pointed out and the technique described.

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Mental Aspects of the Menopause*

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Gross errors in psychiatric diagnosis are apt to be made during the involutional period because of the traditional explanation of all symptoms ranging from insomnia and blushing, to hysteria and delusions of persecution, upon the magic sentence: "She's going through the change in life."

Consequently, an exhaustive clinical study of each case presenting mental symptoms at this period of life must be made. Careful studies of all organic systems must be carried out. Perhaps the most common illness to be erroneously diagnosed is general paresis. A review of sixty-one private cases revealed six cases of general paresis, which had been treated as "change of life cases" with sedatives, rest, and Theelin.

However, after all organic contributing factors such as exhaustion, metabolic disturbances, specific endocrine disorders, blood dyscrasias, constitutional and hereditary mental illness (dementia praecox and manic depressive insanity), avitaminosis, etc., have been excluded, a definite mental syndrome may be found present which we are inclined to attribute, although rather vaguely from a casual point of view, to be in some way associated with the menopause. This clinical mental syndrome occurs in both the artificial and natural climacterium. It is certainly an inconstant accompaniment of the meno-

pause, being present in only a relatively small proportion of all women (and men) who must inevitably pass through this phase of life if they live long enough.

The symptoms listed below are those constituting the mental syndrome accompanying the menopause. When present, there are gradations of severity.

1. Insomnia.
2. Emotional instability — uncontrollable crying spells for which the patient seems to have no logical conscious reason.
3. Fatigue or rapid exhaustibility.
4. Loss of ambition—a feeling of futility.
5. Excessive worry—neurotic, or seemingly justifiable, over financial, domestic, and trivial matters.
6. Feeling of unreality.
7. Functional visceral symptoms—cardiac, gastro-intestinal, genito-urinary and neurological.
8. Phobias—fears of insanity, of crowds, of being alone, of some dreadful calamity.
9. Compulsions and obsessions. Self pity.
10. Hysterical phenomena—temper tantrums, jerking spells, asocial behavior trends.
11. Delusions, or justifiable suspicion of husband's marital infidelity.

*Read before a meeting of the Southwestern Oklahoma Medical Association.

It is remarkable nevertheless, how exhaustive the psychiatric study of actual domestic relationships must be in order to determine whether or not the idea of the patient is delusional.

12. Sexual impotency, frigidity, nymphomania, and inversions.
13. Constant muscular tension, inability to relax. Hot and cold flashes.
14. Occipital or suboccipital pain.
15. Mental depression, melancholia. Ideas of suicide and fears of suicide.
16. Definite personality changes, resulting in slovenliness, unsanitary personal habits, excessive gossiping, fabrication, meddlesomeness.

Perhaps other symptoms could be included. All, or only a few of the above named conditions may be present. It is noticed, however, that no mention of a true psychosis has been made. Hallucinations and delusions have not been included as symptoms of the menopausal mental syndrome. It is true that psychoses may have onset during the menopause, but I question the causal relationship.

Involutional melancholia is of course the classic psychosis mentioned, but psychiatrists have now generally agreed that it is merely a specific form of manic depressive insanity. Dementia praecox may also occur and be precipitated by the involutional environment.

Yet by far the major proportion of mental cases at the menopause comprise a combination of the symptoms outlined above, and really constitute that, which I should like to designate the "Menopausal Psychoneurosis."

I believe that the mental symptoms presented in this neurosis differ in no way from any other type of neurosis. They merely constitute the patient's reaction pattern to the change, which is occurring in her internal and external environment. Time does not permit me to relate clinical psychiatric evidence, because only exhaustive studies of individual personalities can prove this point. Careful analysis of case records, delineating the personality structure, invariably support this idea. The neurotic mental symptoms are merely a reaction of the total personality to the stress of reality. A study of the case will

show that the patient since puberty, has reacted neurotically to environmental stress. It must be remembered that each person behaves somewhat neurotically when passing from one phase of life to another, from childhood to puberty, from puberty to adolescence, and from adolescence to adulthood. In the average person, adjustments to the changing situations are adequately made.

I do not believe that the endocrinologic concomitants of the menopause and involutional period bear any casual relationship to the mental aspects. It is true that the endocrine disturbances, *e. g.*, absence estrin, are present; but the reaction of the patient's total personality to these disturbances determines the nature of the mental symptoms.

"Change of life" or "menopause" is a diagnostic magic formula—a loose and motherly explanation of symptoms, surprisingly gratifying to the patient in many instances, with occasional effective therapeutic result. I have seen many women who were able to bear, with seeming pleasure, the epigastric distress, palpitation, crying spells, compulsive fears, headaches, etc., after her physician had spoken the magic explanation in an esoteric voice—"The change of life."

The patient's response to this is undoubtedly determined by a reliving of her pre-pubertal and pubertal period when her mother explained the malaise, backache, restlessness, and other symptoms, with the equally potent and oftentimes whispered sentence, "You are about to menstruate."

Individuals passing from childhood to adulthood are usually protected by parental and financial support, but during the involutional period, this support is often absent, and they may have a more intense neurotic reaction in this, their first truly unassisted attempt at adjustment.

The psychic aspect of the menopause is minimized, both by physicians and psychiatrists. More attention should be directed toward improving the patient's mental attitude to the changing situation during the climacterium. The physician must construct for the patient a healthy attitude toward the new world. There is a lessening of driving forces in the individuals who are passing through the involutional

period. Major adjustments are demanded, and these often outweigh the adjustments encountered during adolescence.

The patient in the menopause with the symptoms outlined above, is more apt to respond to psychiatric treatment based upon the above principles than from any other form of therapy.

Treatment of this syndrome is therefore primarily psychiatric. This does not mean by a psychiatrist, but by the family physician who is able to study the environmental situation and render the proper suggestive therapy. Some of the more severe

menopausal neuroses require the aid of a psychiatrist. The psychoses should, of course, be institutionalized.

Treatment must be directed toward any contributing organic complication. Endocrine therapy in the form of estrin (Theelin, Progynon, Amniotin), intramuscularly may be given as adjuncts, but are of doubtful value. Lugol's solution is often helpful in the cases simulating hyperthyroidism. Sedatives, if properly used, are of value. But most important in the treatment of these cases is properly administered psychotherapy.

Severe Emotional Disturbance Considered as a Factor in the Etiology of Acute Pancreatitis*

W. P. NEILSON, M.D.

ENID

The resistant tissues of the human body are incapable of meeting a more devastating force than that savage and destructive mechanism presented by acute pancreatitis. Its onset is often terrifically sudden and the damage it produces irreparable. A patient may arise in the morning feeling in the pink of health and before the day is done be struck down to the amazement of all concerned, by this stunning force.

It is an inflammatory disease of the pancreatic gland characterized by hemorrhagic necrosis and marked enlargement. The array of symptoms which it calls forth are as follows:

1. Acute and violent abdominal pain. (Usually in the epigastrium.)
2. Vomiting which is more or less continuous.
3. Vascular collapse:
 - a. A fall in blood pressure.
 - b. Cyanosis, with increase in pulse rate.
4. Sub-normal temperature.
5. Marked anxiety.
6. General collapse.

The ability to successfully diagnose and treat this condition is little better today than it was when this disease was first listed as a distinct entity.

In reviewing a great mass of case reports on this subject, one is appalled at the almost negligible number of cases which are correctly diagnosed before surgical intervention is resorted to. The mortality, regardless of the manner of treatment, is high; few report as low as forty per cent mortality, most writers on the subject report a mortality which ranges from sixty per cent to eighty per cent. In the so-called hyperacute cases it seems to make little difference just what type of treatment is instituted. In less severe cases, however, there is sufficient evidence that surgical interference is justifiable.

The etiological factors concerned are offered largely as theory. Generally writers sum all of them under one of the four heads which are as follows:

1. Contamination of the gland through obstruction of the common bile duct near the ampulla of vater with backing up of bile (supposedly infected)

into the pancreatic duct. This theory was first described by Dr. Opie.

2. Contamination with extra pancreatic fluid through the ducts of Wirsung and Santorini.
3. Infection through the lymphatics. This theory was first advanced by Klipfel.
4. Infection through the blood stream. This theory was first advanced by Kaufman.

The congestion caused by this sudden swelling and inflammation of the pancreas may cause death in one of two ways. If death occurs very suddenly it probably occurs from pressure of the enlarged gland upon the solar plexus; this produces neurogenic shock. In many instances, even in the so-called hyperacute pancreatitis, the patient survives the sudden danger of neurogenic shock but in a few hours succumbs to a toxic shock probably from absorption of the split-protein derivative of histamin. The blood stream quickly absorbs these pancreatic ferments. If this were not true the wide appearance of fat necrosis would not be found in distant fatty tissues.

We have known for a long while that the pancreas is of vital importance in conducting the chemical control of tissue changes. These tissue changes are unquestionably disconcerted when the bulk of pancreatic substances is disorganized as it undoubtedly is in this condition. The writer fully appreciates all opinions as they exist and believes there to be no question concerning the accuracy of opinions relative to the fatal results; but he does believe that there is another factor which in some cases, at least, can not be ruled out from an etiological standpoint. This factor is the effect of a severe emotional disturbance as it affects the functional process of the pancreas, as well as its associate system of glandular brothers.

Emotion is undoubtedly characterized by reflex reactions through the vague and sympathetic systems. Often stimulation of these systems produces alternate vasoconstriction and vaso-dilatation as well as an increased function of the producing tissue which they enervate. In extreme emotion, action is exerted on the supra-renal gland. An excessive amount of supra-renaline further acts upon the sympathetic nerves asserting a stimulus for excessive

activity of other secretory glands which are likewise enervated. Both the supra-renal and pancreatic glands receive their nerve supply through these same nervous channels. Excessive activity of the pancreas may well be the result as excessive activity of the supra-renal is the result. Add this to the violent stimulation through the chemical route due to excessive stimulation of other secretive tissues; the actions are therefore nervous, chemical and circulatory; alternate vaso-constriction and vaso-dilatation seriously impairing the circulatory mechanism.

Often individuals die suddenly, comfortably seated in their homes, listening over the radio to exciting events such as baseball games; or deaths have taken place in grandstands at baseball games at the end of exciting plays conducted by the players. Falling into this class may well be placed certain cases of gastric crises.

Associated as they are by a common nervous network, the vital functional tissue of the body cannot be disassociated physiologically. Sufficient evidence is at hand in numerous instances which connect emotional upheaval with such reactions. As a matter of logic, therefore, why not add emotional imbalance to the other accepted etiological factors in the production of the acute pancreatitis. May I briefly recite the following case:

R. R., white male, age fifty-three years. This patient arose at the usual time in the morning and was feeling exceedingly well. He consistently stated, after repeatedly being asked, that his state of health, both remotely and immediately, had been most excellent. On the day which his illness began he was to act as pallbearer at a friend's funeral. This deceased individual had been closely associated with the patient in many ways and he was considerably upset over his death. The funeral was a largely attended church funeral and due to the illustrious life of the deceased, many glowing tributes were paid him. The patient attended and during the service he began to have a violent chill with light headedness and extreme nervousness. After the church services he was not allowed to proceed further with his part of the service but was taken home.

I called to see him. He was found to be in a very serious condition. He was com-

plaining of violent abdominal pain, not directly in the epigastrium but below the umbilicus in the mid line. His skin, lips, ears and nail beds were cyanosed. His pulse was 130 per minute and thready. His blood pressure was 100/80; temperature was 97.5 degrees Fahrenheit. He began to vomit and continued to vomit large quantities of thin, green colored fluid. In spite of all forms of stimulants his course was steadily down hill. His collapse became more prominent in the next few hours. His pulse became faster and of poor quality. His blood pressure dropped to 68/60, his temperature dropped to 95.5 degrees Fahrenheit and he continued to vomit and complained more severely of abdominal pain. His mental faculties were never cloudy, he had a pinched facies and was extremely anxious. He was subjected to an exploratory laparotomy. The pathology was found in the pancreatic gland. This gland was enlarged to about twice its normal size, it was inflamed, hard and hemorrhagic. The gall-bladder and ducts were distended. The gall-bladder was drained and two drains inserted directly into the pancreatic substance. He died about twelve hours following the surgery.

A second case which I should like briefly to mention does not come under the head of acute pancreatitis. But does, I believe demonstrate the effect of emotional upheaval upon the physiological balance of the pancreas.

This second case was that of a young man in excellent general health, as was shown by a very recent and thorough examination, which included an examination of his urine. This young man went to work for a railway company. He was given the job of repairing the underneath framework of a box car. While he was working under the box car a switch engine was routed on the wrong track and bumped into the car. This patient saw the train just before it hit, not with time enough left for him to get from under the car but in time for him to take a hold of some underlying rods. By a hold on these rods he was able to avert physical harm and was carried for several hundred feet. When the train stopped he got out from under the car and collapsed. He was taken to the hospital. There was found to be a large amount of sugar in his blood and urine and he was

treated for diabetic coma. He aroused from his coma but even with insulin and a strictly scientific regime of treatment his diabetes was never brought under control and he died three months later.

SUMMARY

Connected as it is with the vital glandular tissue of the body, both through a common supply of nervous tissues and being subjected to the hormones of other glands of internal secretions, I do not believe that one can justifiably deny the factor that severe emotional upsets play an important part in the disfunctioning of the pancreatic gland.

Operative Treatment of Sterility in the Male

Francis R. Hagner, Washington, D. C. (Journal A. M. A., December 5, 1936), believes that the most frequent cause of sterility in the male is inflammatory occlusion of the epididymis or vas deferens and limits his remarks to its treatment. The endeavor to overcome the occlusion by an anastomosis of the vas deferens and the globus major offers the only chance of recovery. The author has never had a successful case following operation for sterility, in which the patient has not had a history of bilateral epididymitis. There are two conditions that must be present for a successful result in sterility of this type: first, the vas must be patulous above the point of the anastomosis; second, the globus major, or the upper portion of the body of the epididymis, must contain live spermatozoa. A failure at one time, if live spermatozoa are present and if the vas is patulous, is not a contra-indication to a second operation. In some of his most successful results he has had a failure the first time, with a favorable outcome at the second operation. The time of the appearance of the spermatozoa varies. Re-operation is not recommended before a year has passed. Nearly all of the author's operations have been done by lateral anastomosis, except for a few rather atypical ones, and success has been obtained only in those cases in which silver wire was used as a suture. The operation, while tedious, is not dangerous to life. General anesthesia should be used. In order to avoid the formation of scar tissue no local infiltration should be used. The operation cannot compromise the function of an organ that has already proved functionless.

If They Could Talk, Council Seals Would Say:

"When you see one of us on a package of medicine or food, it means first of all that the manufacturer thought enough of the product to be willing to have it and his claims carefully examined by a board of critical, unbiased experts. . . . We're glad to tell you that this product was examined, that the manufacturer was willing to listen to criticisms and suggestions the Council made, that he signified his willingness to restrict his advertising claims to PROVED ones, and that he will keep the Council informed of any intended changes in product or claims. . . . There may be other similar products as good as this one, but when you see us on a package, YOU KNOW. Why guess, or why take someone's self-interested word? If the product is everything the manufacturer claims, why should he hesitate to submit it to the Council, for acceptance?"

The Duty of the Family Physician in the Presence of a Positive Tuberculin Test*

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A positive tuberculin test, particularly in the period of childhood or adolescence, places before the family physician the difficult task of carefully following a few of the knotty threads which help to make up the complicated fabric of human life.

He must realize that a positive reaction means that the tubercle bacillus has entered the human organism and has produced a pathological condition known as tuberculosis. In reality, a positive test warrants a diagnosis of tuberculosis. It is doubtful if we are justified in continuing to teach that there is a difference between infection and disease. There is a difference between disease which does not produce obvious symptoms and which never manifests demonstrable pathological changes during life, and the same disease which gives rise to the symptoms of toxemia with the demonstrable signs of gross pathology.

Infection with the tubercle bacillus carries a wide range of possibilities. The disease may never cause obvious symptoms or demonstrable pathology. It may, particularly in infancy, lead to the development of one of the acute forms of tuberculosis which usually, in a relatively short time, prove fatal. Generalized miliary tuberculosis, tuberculous meningitis and the acute pneumonic types of pulmonary tuberculosis are among the common forms. If the child with a positive tuberculin test lives to be three or four years of age without developing manifest progressive disease, even though the x-ray may show what we call the primary complex (a calcified or Ghon tubercle in the parenchyma of the lung with secondary involvement of tracheobronchial lymph nodes), we may reasonably anticipate that he will carry on through childhood without clinical manifestations of disease.

When he arrives at the age of puberty there seems to be an inexplicable suscep-

tibility to active progressive disease either through endogenous or exogenous reinfection. Then follows the train of variable possibilities always accompanying manifest tuberculosis.

Time will not permit a detailed discussion of these possibilities. Suffice it to say that the individual with a positive tuberculin test faces all the possibilities inherent in the wide range of hematogenous clinicopathological manifestations from the relatively inert primary complex through mild, moderately severe, to overwhelming generalized tuberculosis; and from low-grade fibrotic bronchogenic lung lesions through progressive stages of caseo-ulcerative forms, to widespread bilateral multilobar involvement which so often precedes death.

What has been said emphasizes the grave responsibilities resting upon the family physician when he stands in the presence of a child exhibiting a positive tuberculin test. Obviously he must throw about such an individual every available safeguard. Time will not permit a discussion of management, but we must insist upon a full recognition of its importance.

A positive tuberculin test has other implications and places upon the family physician other obligations. Having discharged his duty with reference to the individual manifesting the evidence of infection, he must consider the probable source of infection. Infection with the tubercle bacillus means contact with the tubercle bacillus. This usually means intimate contact with some one who has open tuberculosis. Naturally some one in the home must be considered the most probable source of infection. A negative family history is of little importance. Each member of the family, including relatives, servants and others who may reside in the home, should have a tuberculin test; and every one exhibiting a positive test should have a thorough examination, including an

*Address at Post-Graduate Course on Tuberculosis at Tulsa, September 29, 1936.

acceptable x-ray of the chest. Any member of the household manifesting symptoms or signs of pulmonary disease should be examined even though the tuberculin test is negative. Repeated sputum examinations should be made in suspected cases where sputum is available. Accepting a single negative sputum examination as final often leads to disaster.

If such a searching investigation fails to reveal the source of infection in the home, we must consider the possibility of contact with tuberculous teachers, neighbors, or visiting friends and relatives. Finally, hand to mouth infection must be considered. The baby on the floor, the child playing jacks or marbles on the street, may easily make contact with tubercle bacilli which have been deposited there by someone suffering from open tuberculosis. Occupants of the home may carry the tubercle bacilli on their feet or they may be carried in by dogs and cats. Contaminated food may constitute another source of hand to mouth infection.

Thanks to those who have instituted the wise handling of dairy herds in this coun-

try, and the added precaution of pasteurization of milk before consumption, we see relatively little bovine tuberculosis in the United States. However, we must not forget the possibility of infection from undiscovered tuberculous cows privately owned or in dairy herds.

We must admit that the execution of the proposed program is often difficult. Nevertheless, the obligation rests squarely upon the shoulders of the physician who discovers a positive tuberculin test. Fortunately for those physicians who may not be interested, or who may not desire to carry out such a program, the aid of specialists or voluntary and public health agencies in the field of tuberculosis may be secured. The same sources of service may be recommended to the physicians who are interested in executing the program but feel the need of help with certain phases of the examination.

(The above discussion was supplemented by the history of family groups and the exhibition of x-rays showing family infection.)

Supra Renal Denervation for Malignant Hypertension

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According to White the first reference to the involuntary nervous system was made by Galen in the second century. He called it the "reinforcers to the nerves."

The various terms as sympathetic, ganglionic, autonomic and vegetative have been applied since.

Kuntz states that Winslow spoke of the sympathetic nervous system in 1732 and that the term vegetative was applied in 1800 by Bichat. Gaskell added the divisions as cranial thoraco-lumbar and sacral in 1886.

Langley and Dickinson added to the general knowledge in 1889 by discovering that nicotin could be used to determine relationship between nerve fiber and nerve cell.

Langley is responsible for the word autonomic, which seems to be the most universally used term.

Many works epochal in character have been published in recent years by great students such as Lerich in Strassburg, Germany, White, Kuntz, Gaskell, Lampton, Ross and Crile. The latter viewing from a somewhat different angle.

Surgery of the autonomic nervous system is a more recent development when about ten years ago classics were written on the relief of angina pectoris.

Since then many students have entered the field to broaden our knowledge and have opened a very promising and valuable division of surgery. It is hoped that

heretofore baffling problems can be solved.

The purpose of this paper is to bring to your attention today a procedure that may help to solve a problem that heretofore has been followed closely by great men and with varying results: that of denervation of the supra renal gland for relief of malignant hypertension. I do not and can not show a series of cases, but hope to provoke study among men who are hungry for new knowledge that may help to solve this problem.

I also am not proposing to write or advocate that the procedure I am about to describe is the final chapter or complete solution to the great problem of malignant hypertension, but I do propose to show you a case that I think was certainly salvaged and greatly benefitted by the procedure. This may, according to Crile, be a small per cent of cases among many, but if only a very small per cent can be placed back at their livelihoods so they can pursue their position among people, it is worth while.

The etiology of malignant hypertension, of course, is not definitely known, and it is because of this fact and lack of knowledge that the great research men have placed themselves at the task of its solution.

The long known pressor effect principle of adrenalin has been the cue to study its relationship to the autonomic nervous system and to probably solve the problems of malignant hypertension in younger individuals.

Dr. Crile states that the supra renal gland occupies the driver's seat in relation to the autonomic nervous system. As stated above, the young patient under forty or thereabout is the one we are most interested in. He has his hypertension after the usual methods of eliminating foci of infections, etc., have been exhausted.

Kieth and Wagner state that a young individual can not survive usually more than two years when their diastolic is one hundred and thirty or above. These cases have, as a rule, normal vascular systems or very nearly so. Their vasomotor centers according to Monokor are hyper-irritable, evidenced nearly always by being highly emotional.

The older individuals who show the usual kidney, heart and vascular changes

would reap very little benefit from a procedure of this kind. It will, however, prolong life to some extent and even this small ray of hope is gladly accepted by some as life is sweet to them.

A hurried review of the anatomy of the supra renal nerve supply would seem apropos in a paper of this kind.

As you will recall, the supply of nerves to the gland is divided into the intrinsic and extrinsic, the latter derived largely from the coeliac ganglion and plexus, but does receive fibers from the phrenic plexus above and the renal below. They enter the gland as a rule through the hilus. Demonstrations prove that thirty to forty fibers have to do with the supra renal gland upon entering the gland at the hilus as usually they pass to the medulla, uniting with the small ganglion there. A minority amount go to the cortex and capsule. The vagus and phrenic nerves contribute some fibers to the picture. Little is known regarding the nervous influence relative to function of the cortex.

The detail of the anatomy of the nerves in the gland would only prolong this paper and be of little value relative to the subject at hand.

The physiology of the adrenal system is interesting here as it relates to hypertension.

Crile states that there are thirty or forty sympathetic nerves supplying the adrenal gland coming directly from the coeliac ganglion and as you will recall, they in turn come from the coeliac plexus.

It is these efferent nerve fibers that connect the supra renal gland and the coeliac plexus that we sever in a denervation. As stated above, the Pressor principle of the gland has long been known, but why the disturbed physiology?

Kuntz states that muscular activity and emotional excitement increase the output of adrenalin, while splanchnic stimulation increases the outflow of blood from the gland.

It is logical to believe that excessive long over-stimulation would produce a condition similar to malignant hypertension. Crile states that young individuals who are nervous and heart conscious with hypertension show an endurance increase, returning to work after denervation.

Malignant hypertension must be differentiated from benign or essential hypertension forms.

It is characterized by occurring in young individuals with no previous demonstrable vascular disease or changes and running a rapidly fatal course.

It is because of these very alarming factors that we attempt to disconnect or denervate the supra renal gland, hoping that function plays a great role in its production. Some cases will run a systolic of 200 mm. and a diastolic well over 100 mm.

Changes in the retina are very common. The patients are subject to emotional excitement and frequently give a history of having had a severe nervous shock or some continuous nervous irritation as fear, grief or financial worries. The depression has been the father of many such conditions.

Vascular hypertension differentiates itself by its name.

Hyperthyroidism is occasionally a concomitant disease but some writers think that denervation is doubly indicated.

It is the agreed hopelessness of malignant hypertension that has stimulated much thought and research toward its elimination or cure. Any degree of success is always gladly accepted by the patient as they are young individuals with the future dark without relief. Medical treatment has been of little avail.

Frequent tappings have been obviously palliative.

The control of hypertension by sympathetic denervation was first suggested by Danielopolu in 1929 and Brunning in 1923.

Sympathectomies of various types have been done with various, but interesting results. No attempt will be made to describe the various methods here.

Adson and Brown severed the anterior thoracic roots from the sixth thoracic to the second lumbar hoping to stop the vasomotor outflow below the diaphragm. This method, of course, denervated the supra renal glands, but gave the large abdomen from muscular relaxation, gladly accepted many times by the patient for relief.

Denervation of the gland itself would at least seem to be an operation that would promise results since it occupies such an important position relative to

pressure in the autonomic nervous system.

Dr. Crile states that probably not enough results can be obtained to justify the denervation. It seems, though, even a small per cent of results would be worth while.

It should at least spur us on to do all we can to accomplish results. The technique of supra renal denervation is carried out through a kidney approach incision, avoiding the twelfth, thoracic, iliohypogastric and ilio-inguinal nerves.

The latissimus dorsi muscle fibers are cut across down to the serratus posticus and external oblique.

The latter fibers can be split usually, exposing the lumbar fascia and internal oblique, which are cut through, exposing the perirenal fat. The kidney can be felt through the fat and is retracted downward by retractors. The pleura and peritoneum are close neighbors and must be avoided.

The peri adrenal fat is now identified and incised, identifying the gland by palpation. A careful hand dissection is done by inserting the hand into the wound, severing the thread-like nerves as well as can be accomplished. Then the gland is elevated by special fork-like retractors and the remaining sympathetic nerves severed by direct vision. Manipulation of the gland will raise the blood pressure sometimes as much as twenty points both systolic and diastolic.

The wound is closed after placing two cigarette drains. Occasionally the wound is washed out with saline to remove all expressed adrenalin to prevent post-operative excessive elevation. The left side is usually done first because it is anatomically the easiest. The right side in some cases can be done in six to ten days. Sometimes the patient is allowed to go home for three to six months, so the result can be estimated.

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THE JOURNAL

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McAlester, Oklahoma

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McAlester, Oklahoma

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Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

WHAT OF THE PROGRAM?

The first of this New Year it is well to direct our attention to some of the business affairs of the Association and observe just how we are progressing with the program which was outlined by the House of Delegates at Enid.

This program proposed a considerable undertaking and for the first time in our history called for the undivided support of the membership in accomplishing a great advance in public relations and legislation. It was adopted by a unanimous vote of the House. Not a single delegate, not one representative from a component County Society, voted against this measure and it appeared that unanimous sup-

port could be expected, but it seems now that these delegates did not well represent their constituents as only about forty-five per cent of the membership has shown a willingness to co-operate. Now there is a question as to whether this is an attitude of apathy or revolt. Does this other fifty-five per cent wish the program carried out expecting those contributing to bear their share of the burden, or are they opposed to the program?

It is possible to accomplish much with the set up that has been perfected by your Committee on Public Relations if the membership rallies to their support; if this is not done, all their efforts will come to naught. It is for the membership to decide and their decision means much. Shall we have an amended Medical Practice Act and a Basic Science Law? Is it our duty to protect the people of this state with legislation that will guarantee to them the proper education of those who practice the healing art? If so we must be behind this program to a man. Is it our duty to organized medicine to clean our own house? If so we need badly the proposed amendments to the Medical Practice Act and we cannot well expect the respect of the laity unless we keep the practice of medicine on a high plane and not allow it to become commercialized.

These are the questions before us today and if each county will meet its allotment, pay the annual dues of \$8.00 promptly and see to it that your members of the Senate and House are familiar with the facts we may expect to accomplish all the things that the people of Oklahoma need for their protection in the way of medical legislation.

AN URGENT APPEAL

To All Doctors of the State Medical Association of Oklahoma:

To continue our Legislative program into anything like a successful conclusion we must have more funds.

Your committee has traveled some ten thousand miles and spent some fifty or sixty days of their time, each without compensation, and at the same time have spent their own money to forward this program, and it looks to me as if the vari-

ous County Societies and their component members would appreciate this enough to furnish the necessary funds to carry on this vital fight, or by some means designate to us that our services are no longer desirable and that you prefer to turn the practice of medicine over to the men who are outside of organized medicine, and the cults.

Let me tell you, gentlemen, I consider this the most momentous fight that has ever faced organized medicine in the entire nation and that our welfare and the future of organized medicine depends almost entirely on the outcome of this fight.

H. K. SPEED, M.D., Chairman,
Legislative Committee,
Oklahoma State Medical Assn.

Sayre, Okla., December 26, 1936.

Editorial Notes—Personal and General

At the request of the Surgeon General of the U. S. Public Health Department, the following committee has been appointed by the President, Dr. George R. Osborn, to assist in the syphilis control program which is being sponsored by the Public Health Department:

DOCTORS DAVID V. HUDSON, Chairman, Tulsa; SHADE D. NEELY, Muskogee; ROBERT AIKEN, Oklahoma City.

DR. LEA A. RIELY, Oklahoma City, was elected second Vice-President of the Southern Medical Association at its meeting in November.

DR. C. S. WALLACE, Holdenville, has been appointed County Health Superintendent of Hughes County.

DR. R. B. FORD, Oklahoma City, announces the opening of his office, for the practice of surgery, at 1113 Medical Arts Building.

DR. J. WILLIAM FINCH, formerly of Sentinel, announces the removal of his offices to Hobart where he will occupy the offices of the late Dr. H. C. Lloyd.

DR. J. SAMUEL BINKLEY, formerly of Oklahoma City, is now connected with the Memorial Hospital of New York for Treatment of Cancer and Allied Diseases.

DR. BEN H. COOLEY, Norman, has been elected Secretary-Treasurer of the Southern Oklahoma Medical Association. DR. G. L. JOHNSON, Pauls Valley, was elected President.

DR. G. S. BARGER, Purcell, is doing Army medical service at Ft. Bliss.

DR. FLOYD L. WATERS, formerly of Oklahoma City, announces the opening of offices in Hugo.

DR. T. W. STALLINGS announces the opening of an Eye, Ear, Nose and Throat Clinic at 724 South Elgin, Tulsa.

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 30.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	170.00
Caddo	240.00	90.00
Canadian	230.00	75.00
Carter	260.00	130.00
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	185.00
Custer	230.00	210.00
Garfield	420.00	250.00
Garvin	150.00	150.00
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	140.00
Jackson	160.00	120.00
Jefferson	110.00	
Johnston	10.00	
Kay	320.00	290.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	50.00
Logan	200.00	100.00
Major	30.00	
Marshall	50.00	
Mayes	110.00	10.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	60.00
Murray	110.00	
Muskogee	520.00	60.00
Noble	40.00	
Nowata	50.00	50.00
Okfuskee	150.00	100.00
Oklahoma	2740.00	1065.00
Oklmulgee	280.00	210.00
Osage	220.00	220.00
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	250.00	160.00
Pittsburg	350.00	180.00
Pontotoc	300.00	300.00
Pottawatomie	330.00	160.00
Pushmataha	75.00	30.00
Rogers	120.00	60.00
Seminole	320.00	110.00
Sequoyah	10.00	10.00
Stephens	220.00	60.00
Texas	50.00	20.00
Tillman	100.00	110.00
Tulsa	1980.00	
Wagoner	40.00	40.00
Washington	250.00	240.00
Washita	120.00	
Woods	190.00	140.00
Woodward	260.00	150.00

NOTE—Corrections and additions to the above list will be appreciated.

News of the County Medical Societies

COTTON COUNTY MEDICAL SOCIETY met in December and the following officers were elected for 1937: Dr. Mollie F. Scism, Walters, president; Dr. Howard McKinney, Temple, vice-president; and Dr. F. G. Stephens, Temple, secretary-treasurer.

At a regular meeting of the **GARVIN COUNTY MEDICAL SOCIETY** Wednesday evening, December 16th, 1936, the following officers were elected for 1937: Dr. M. E. Robberson, Jr., Wynnewood, president; Dr. A. H. Shi, Stratford, vice-president; Dr. John R. Callaway, Pauls Valley, secretary-treasurer; and Dr. Hugh Monroe, Lindsay, censor. Dr. John R. Callaway, Pauls Valley, was elected delegate to the state meeting, Dr. Edward Shirley, Pauls Valley, alternate.

BRYAN COUNTY MEDICAL SOCIETY met December 17th and officers as follows were elected: Dr. G. M. Rushing, Durant, president; Dr. P. L. Cain, Albany, vice-president; Dr. Jas. L. Shuler, Durant, secretary; and Dr. A. J. Wells, Caddo, censor. Dr. Jas. L. Shuler is delegate to the state meeting. Dr. W. K. Haynie of Durant, was elected to membership.

WAGONER COUNTY MEDICAL SOCIETY met December 29, 1936, and the following officers were elected: Dr. S. R. Bates, president; Dr. H. K. Riddle, vice-president; Dr. John D. Leonard, secretary-treasurer; Dr. John D. Leonard, delegate, and Dr. H. K. Riddle, alternate.

OSAGE COUNTY MEDICAL SOCIETY met December 7, 1936, and the following officers were elected for the year 1937: Dr. R. A. Baylor, Fairfax, president; Dr. R. O. Smith, Hominy, vice-president; Dr. G. K. Hemphill, Pawhuska, secretary-treasurer; Dr. Roscoe Walker, Pawhuska, censor, 1937; Dr. R. O. Smith, Hominy, censor, 1937.

BECKHAM COUNTY MEDICAL SOCIETY held

an election of officers Tuesday, December 8th, as follows: Dr. E. S. Kilpatrick, Elk City, president; Dr. P. J. Devanney, Sayre, vice-president; and Dr. H. K. Speed, Jr., Sayre, secretary-treasurer.

OTTAWA COUNTY MEDICAL SOCIETY had its annual banquet Thursday night, December 17th, 1936, at the Miami Baptist Hospital. There was an election of officers for the ensuing year as follows: Dr. Richard Russell, Picher, president; Dr. J. W. Craig, Miami, Dr. Benj. W. Ralston, Commerce, and Dr. W. B. Smith, Fairland, vice-presidents; and Dr. W. G. Chesnut, Miami, secretary-treasurer. The Board of Censors is composed of past presidents, Dr. M. M. DeArman, Miami, Dr. A. M. Cooter, Miami, and Dr. J. S. Jacoby, Commerce.

The annual meeting of the **OKMULGEE-OKFUSKEE MEDICAL SOCIETY** was held at the Belmont hotel, Okmulgee, December 21, 1936. Speakers were Dr. J. E. McDonald, Tulsa, on "Fractures of the Neck of the Femur," and Dr. P. N. Charbonnet, Tulsa, on "Sterility."

Resolutions of sympathy on the death of Dr. J. C. Robinson, Henryetta, were approved and sent to the Journal for publication.

Okmulgee County officers for 1937 are as follows: Dr. J. P. Nelson, Beggs, president; Dr. J. R. Cotteral, Okmulgee, vice-president; Dr. M. B. Glismann, Okmulgee, secretary-treasurer; Dr. V. M. Morris, member of the board of censors; Drs. I. W. Bollinger and M. B. Glismann, delegates; Drs. A. R. Holmes and C. M. Ming, alternate.

CRAIG COUNTY MEDICAL SOCIETY met Tuesday evening, December 1st, and elected the following officers: Dr. P. L. Hays, president; Dr. E. Eldon Baum, vice-president; Dr. James Darrough, secretary-treasurer; Dr. Louis Bagby, delegate; Dr. W. R. Marks, alternate; and Dr. A. W. Herron, censor.

Dr. Elizabeth Lehmer read a paper on "Hydrocephalus" and presented a very unusual clinic.

Dr. Hugh C. Graham of Tulsa talked on "Diag-

Report of Licenses Granted to Practice Medicine

NAME	Year of Birth	Place of Birth	School of Graduation	Year	Address
Rutledge, Alfred V.	1870	Aberdeen, Miss.	Memphis Hospital Med. College	1900	Yale, Oklahoma
Ishmael, Wm. R.	1910	Oklahoma City, Okla.	Oklahoma University	1935	Oklahoma City, Okla.
Jenkins, Paul A.	1911	—, Okla.	Oklahoma University	1934	Jersey City, N. J.
Hassler, Grace Clause (F)	1900	Enid, Okla.	Oklahoma University	1935	Oklahoma City, Okla.
Spence, Wm. Potter	1876	Good Hope, Ill.	Denver & Gross	1905	Sayre, Oklahoma
Raines, Jas. Richard	1911	Hitchcock, Okla.	University of Oklahoma	1935	Warrenville, Ohio
Sanger, Walter B.	1912	Yukon, Okla.	University of Oklahoma	1935	Spokane, Washington
Allespach, Walter Louis	1894	Buffalo, N. Y.	University of Buffalo	1919	Tulsa, Oklahoma
Barker, Warren Jackson	1910	Kaw, Oklahoma	Tulane University	1936	Ponca City, Okla.
Box, Otho Hawthorne, Jr.	1906	Ft. Jessup, La.	Baylor University	1936	Grandfield Okla.
Coston, Tullios Oswell	1905	Dixie, La.	Johns Hopkins	1930	Oklahoma City, Okla.
Curry, John Russell	1908	Agnew, Neb.	University of Nebraska	1934	Blackwell, Oklahoma
DeGaris, Charles Francis	1886	Hannibal, Mo.	Washington University	1912	Oklahoma City, Okla.
Eaton, Charles Frank	1906	Eris, Kansas	University of Kansas	1935	Perry, Oklahoma
Franklin, Samuel Ewing	1908	Broken Arrow, Okla.	Northwestern University	1934	Broken Arrow, Okla.
Henderson, Jesse Lester	1900	Waverly, Ill.	Washington University	1929	Oklahoma City, Okla.
Miles, George Oliver	1910	St. Louis, Mo.	Arkansas University	1935	Perry, Oklahoma
Moxley, Joseph Newton	1910	Brantley, Ala.	Emory University	1935	Ardmore, Oklahoma
Pattison, Arthur Coleman	1907	Oelwein, Iowa	University of Iowa	1930	Oklahoma City, Okla.
Pursley, Turner	1899	Cerulean, Ky.	Vanderbilt University	1924	Picher, Oklahoma
Sayles, Wm. Jackson	1904	Council Bluffs, Iowa	University of Iowa	1931	Miami, Oklahoma
Swanson, Karl Frederick	1901	Oskaloosa, Iowa	University of Iowa	1927	Tulsa, Oklahoma
Sweet, Lewis Kaigler	1902	Brownwood, Texas	Harvard University	1922	Tahlequah, Oklahoma
VanMatre, Reber Miller	1907	Springfield, Mo.	Washington University	1933	Lawton, Oklahoma
Wood, Jason Guild	1901	Izatpun, India	College of Medical Evangelists	1925	Weatherford, Okla.
Wood, William McConnell	1909	Sandersville, Ga.	University of Colorado	1905	Muskogee, Oklahoma
Wright, Lennel Irwood	1902	Benton, Kansas	Kansas University	1935	Blackwell, Oklahoma
Janes, Green M.	1865	Clarence, Mo.	Missouri Medical College	1890	Walters, Oklahoma
Collier, James Wesley	1871	—, Alabama	Memphis Hospital Medical College	1901	Tipton, Oklahoma
Morrison, Marjorie Graham Eberhart	1903	—, Arkansas	Oklahoma University	1930	Danville, Indiana

nosis and Treatment of Acute Anterior Polio Myelitis."

CUSTER COUNTY MEDICAL SOCIETY elected the following officers for 1937: Dr. J. T. Frizzell, Clinton, president; Dr. Ross Deputy, Clinton, vice-president; Dr. C. Doler, Clinton, secretary; Dr. N. E. Ruhl, Weatherford, censor for 1937-38-39. Delegates to State Meeting: Dr. A. W. Paulson, Clinton, and Dr. Gordon D. Williams, Weatherford. Alternate delegates: Dr. Leolan Lamb, Clinton, and Dr. Curtis Cunningham, Custer City.

STEPHENS COUNTY MEDICAL SOCIETY met Tuesday evening, December 22, in the dining room of the New Duncan Hotel where a very delightful dinner was served under the direction of the hosts, Drs. W. T. Salmon and E. C. Lindley. Following the dinner Dr. Gerald Rogers of Oklahoma City read a very interesting paper on "The Use of Local Anesthesia in Obstetrics," followed by a highly instructive illustrated lecture on "The Various Types of Kidney Diseases" by Dr. Basil Hays, also of Oklahoma City.

The following officers were elected for the 1937 term: Dr. E. G. King, Duncan, president; Dr. W. T. Salmon, Duncan, vice-president; Dr. Fred T. Hargrove, Duncan, secretary-treasurer; Dr. W. S. Ivy, Duncan, delegate; Dr. A. M. McMahon, Duncan, alternate delegate; Dr. J. L. Patterson, Dr. A. M. McMahan and Dr. W. T. Salmon, censors.

The next meeting will be held January 25, 1937.

PAWNEE COUNTY MEDICAL SOCIETY elected the following officers for 1937 at their meeting in December: Dr. J. L. LeHew, Pawnee, president; Dr. Harry Spaulding, Ralston, vice-president; Dr. L. P. Hetherington, Pawnee, secretary-treasurer.

Southeastern Oklahoma Medical Association Meets at Durant in December

Southeastern Oklahoma Medical Association met at Durant, Okla., Thursday, December 10, 1936. Sessions were held in the Sunday school room of the First Methodist Church. The program follows:

Urological Backache—Dr. A. R. Russell, McAlester, Okla.

Preventive Medicine—Dr. H. B. Fuston, Bokchito, Okla.

Luncheon was served at 12:30 p. m., First Methodist Church, the program being resumed at 1:30 p. m. with invocation by Rev. R. T. Blackburn, pastor First Methodist Church of Durant.

Welcome Address—Dr. Jas. L. Shuler, Durant.

Response—Dr. J. F. Park, McAlester.

Infectious Cerebro-Spinal Meningitis—Dr. Roy L. Cochran, Caddo.

Pneumonia Among the Rural Poor—Dr. W. A. Ramsey, Quinton.

Catarrhal Jaundice—Differential Diagnosis and Management—Dr. C. E. Lively, McAlester, McAlester.

Legislation—Dr. J. S. Fulton, Atoka.

Hernia—Dr. G. E. Harris, Hugo.

In addition to the foregoing program other timely medical and surgical subjects of general interest were discussed.

Dr. A. J. Wells, Caddo, is president, and Dr. John A. Haynie, Durant, secretary of the association.

Just a reminder, doctor. Memberships become delinquent February 1st.

OKLAHOMA REGIONAL FRACTURE COMMITTEE ANNOUNCED

Following is a list of the Oklahoma Regional Fracture Committee:

Dr. Earl D. McBride, Chairman, Oklahoma City; Dr. Charles R. Rountree, Oklahoma City; Dr. Willis K. West, Oklahoma City; Dr. D. H. O'Donoghue, Oklahoma City; Dr. C. E. Clymer, Oklahoma City; Dr. Elias Margo, Oklahoma City; Dr. Howard B. Shorbe, Oklahoma City; Dr. Robert L. Noell, Oklahoma City; Dr. Frank L. Carson, Shawnee; Dr. Edgar E. Rice, Shawnee; Dr. McLain Rogers, Clinton; Dr. Victor C. Tisdal, Elk City; Dr. H. E. Huston, Cherokee; Dr. J. L. Patterson, Duncan; Dr. John E. McDonald, Tulsa; Dr. Frank Stuart, Tulsa; Dr. Albert W. Pigford, Tulsa; Dr. William P. Fite, Muskogee; Dr. L. S. Willour, McAlester; Dr. Thomas McElroy, Ponca City; Dr. Robert B. Gibson, Ponca City; Dr. Lloyd C. Vance, Ponca City; Dr. John A. Haynie, Durant; Dr. Warren T. Mayfield, Norman; Dr. Walter Hardy, Ardmore; Dr. Thomas M. Aderhold, El Reno; Dr. J. W. Mercer, Cherokee; Dr. E. M. Woodson, Poteau; Dr. G. D. Funk, El Reno; Dr. John L. LeHew, Guthrie; Dr. E. A. Aisenstadt, Picher; Dr. Roy L. Fisher, Frederick; Dr. Ernest B. Dunlap, Lawton; Dr. John F. Simon, Alva; Dr. Alfred M. Evans, Perry; Dr. F. A. Hudson, Enid; Dr. E. A. Canada, Ada; Dr. Raymond H. Fox, Altus; Dr. Henry C. Weber, Bartlesville; Dr. M. C. Clift, Blackwell; Dr. R. H. Sherrill, Broken Bow; Dr. H. M. McClure, Chickasha.

Dermoid and Epidermoid Tumors (Cholesteatomas) of Central Nervous System

J. Grafton Love and James W. Kernohan, Rochester, Minn. (Journal A. M. A., December 5, 1936), base their discussion on a clinical, surgical and pathologic study of fifteen congenital epithelial tumors (epidermoids, dermoids, pearly tumors and cholesteatomas) of the central nervous system that have been verified microscopically at the Mayo Clinic. Fourteen of the fifteen patients who harbored these tumors were operated on by the members of the neurosurgical staff of the clinic, with three post-operative deaths. Fourteen of the tumors were intracranial. One dermoid was found in the spinal cord. The average age of the patients who had dermoid tumors was 22.3 years at the onset of symptoms and the average age of patients who had epidermoid tumors was 20 years at the time of onset. The average duration of symptoms was sixteen years in cases in which epidermoids were present and eight and a half years in cases in which dermoids were present. Twelve of the fourteen patients who had a congenital epithelial tumor (dermoid or epidermoid) in the head complained of headache. Only two patients had had convulsions; both of these patients had tumors that were situated in the basofrontal region. Twelve patients displayed definite alterations in their mental reactions. A congenital intracranial dermoid or epidermoid should be suspected in any case in which mental disturbance is associated with headache that has been present for a long time and suggests increased intracranial pressure. Five of the patients had edema of the optic disks at the time they were examined at the clinic. One had an associated defect in the field of vision which was sufficiently characteristic to localize the tumor. There are no criteria for making a correct diagnosis of the type of intradural tumor prior to operation. The relationship of trauma to these tumors is not clear. Trauma to the region of such a tumor doubtless will influence its growth, but injury in itself is not believed to be sufficient to cause the tumor.

RESOLUTIONS

DOCTOR A. L. McINNIS

WHEREAS, the Supreme Master of our destinies has beckoned to one of our beloved colleagues, directing him to lay aside his mortal habiliments and cease his earthly labors, and

WHEREAS, by the passing of Dr. A. L. McInnis, the entire medical profession, the community at large and those who have learned to depend on him for advice and counsel have suffered a great loss, and there has been left a place, vacant, that cannot be filled, not only in the profession but in the hearts of all who knew him, and

WHEREAS, we, the members of the Garfield County Medical Society mourn the loss of our fellow member and desire to convey to the world our appreciation of his great service, therefore,

BE IT RESOLVED, that we express to the family our sincere sympathy and condolence in this their hour of travail, and

BE IT FURTHER RESOLVED, that a copy of these Resolutions be sent to the family of Dr. McInnis, a copy recorded on the minutes of the Garfield County Medical Society, a copy sent to the Journal of the Oklahoma State Medical Association and a copy to the press of this city.

W. P. Neilson, M.D.

J. R. Swank, M.D.

H. F. Vandever, M.D., Committee.

DOCTOR W. G. KIEBLER

WHEREAS, the Supreme Architect of the Universe, in His infinite wisdom has seen fit to call from among us Dr. W. G. Kiebler, who for many years labored faithfully in his chosen field for the alleviation of suffering humanity, and

OBITUARIES

DOCTOR W. G. KIEBLER

Dr. William G. Kiebler was born near Paducah, Kentucky, May 28, 1884, where he grew to young manhood. After completing his preliminary education he entered the University of Louisville School of Medicine, from where he graduated in 1905. Following graduation he began the practice of medicine at Carrsville, Kentucky. In 1910 he came to Oklahoma, locating at Goltry, at which place his only son, William, Jr., was born. In 1920 he moved to Enid and joined the staff of the Enid General Hospital. Later he moved his offices to the Broadway Tower. Dr. Kiebler had an extensive practice and was actively engaged with it until a few days before his death, which occurred on November 29 following a brief illness of pneumonia.

It became noticeable to his friends several days before he was forced to take to his bed that he was not feeling the best and he was urged to quit for a while that he might recuperate, but an indomitable will and a deep concern for his patients led him to carry on up to the very portals of death. His first consideration was always for his patients.

Dr. Kiebler had the happy gift of making friends, and keeping them, and was held in high esteem by all who knew him. He believed in his profession, his friends and his community. He was an active member of the Garfield County Medical Society and was a thirty-second degree Mason.

Funeral services were held at the Central Christian Church Wednesday, December 2, with the Rev. J. N. Sours in charge. A large number of friends gathered there to pay their last sad respects and tribute to a life well and usefully spent. Rev. Sours, in a summation of his eulogy of Dr. Kiebler, said: "Whether or not he be skeptic, an agnostic, or a believer, the conscientious physician, in the practice of his profession, is truly following in the footsteps of the Master."

DOCTOR A. L. McINNIS

Dr. A. L. McInnis was born at Llano, Texas, June 28, 1883. He finished the course at the West Texas Normal at Cherokee and later attended the St. Louis College of Physicians and Surgeons, completing his medical course at the Tulane University, where he was graduated in 1909. After a short period of residence in Oklahoma City, he located in Enid where he lived and practiced his profession until his death which occurred December 2, following a brief illness of pneumonia. He is survived by his wife, who lives at the home, 1204 Indian Drive, his son, Harry, his mother, two sisters and two brothers.

Dr. McInnis, "Mac" to his physician friends, was a loyal and active member of the Garfield County Medical Society, a member and worker in the First Presbyterian Church, the Enid Rotary Club and the Masonic order where he was a thirty-second degree Mason, a Shriner and a Knight Templar.

Dr. McInnis had not been in good health for the past year but he kept determinedly on despite his weakened condition, making his regular calls and maintaining his office hours for the many who sought his advice and counsel. The welfare of his patients was always uppermost in his mind. He was just as sincere in community service. Given a task to perform, he pursued it with all his energy until it was completed. He was a dependable man.

Funeral services were held in the First Presbyterian Church, December 4, with the Rev. Thomas H. McDowell and Dr. Dan Luther Edwards, his former pastor, in charge. The large auditorium of the church was filled with his friends gathered to pay their last tribute of respect for the physician, and the man they loved. Members of the Garfield County Medical Society and of the Enid Rotary Club attended in a body to pay their tribute to their colleague and fellow member.

"We shall meet and we shall miss him; there will be one vacant chair."

WHEREAS, his vacant chair will be an ever present reminder that his absence from his accustomed place among us is keenly felt by those of us who must carry on without him, and

WHEREAS, the Garfield County Medical Society has lost a faithful member and those among whom he labored for so many years, a trusted and valuable counselor, therefore

BE IT RESOLVED, that we extend to the family our deepest sympathy and assure them of our sincere desire to share with them this burden of loss, and

BE IT FURTHER RESOLVED, that a copy of these Resolutions be sent to the family of Dr. Kiebler, a copy spread on the minutes of the Garfield County Medical Society, a copy to the Journal of the Oklahoma State Medical Association and a copy to the press of this city.

R. C. Baker, M.D.

Julian Feild, M.D.

H. H. Hudson, M.D., Committee.

DOCTOR J. C. ROBINSON

On December 9, 1936, Dr. J. C. Robinson of Henryetta, Oklahoma, laid down his labors and departed this life for the great beyond

Therefore be it resolved by the Okmulgee County Medical Society that we honor him by offering the following resolutions:

WHEREAS, our fellow member and friend, Dr. J. C. Robinson of Henryetta, Oklahoma, who was a member of the Okmulgee County and State Societies of long standing, was called from us on December 9, 1936, and whereas he has rendered through it most valuable service to the profession in this society as one of the most beloved members of the medical profession.

THEREFORE, be it resolved that we receive this information with profound sorrow and regret, and realize our loss and the loss to the community in which he lived.

BE IT FURTHER RESOLVED that a copy of these resolutions be made a part of our minutes of this meeting, that it be published in the State Journal and a copy be sent to his family.

A. R. Holmes, M.D.,

G. Y. McKinney, M.D.,

G. A. Kilpatrick, M.D., Committee.

Endocrine Factors in Sterility

Richard Chute, Boston (Journal A. M. A., December 5, 1936), is of the opinion that much of the treatment of endocrine sterility in the past has been unsuccessful owing partly to the indiscriminate use of miscellaneous gland therapy, based on vague hopes rather than on science. Clinically there are three glands, the hypofunctioning of which are mainly responsible for most endocrine sterilities—the anterior pituitary most frequently, then the ovary and the thyroid. In dealing with sterility of probable endocrine origin, it is of fundamental importance to find out by means of both clinical and laboratory observations, including biologic hormone tests, which gland is primarily responsible, in order to give the proper treatment intelligently and effectively. The therapeutic injection of gonad substance not only does not stimulate the gonads but injures them and is contraindicated in sterility. At the present time the simultaneous administration of both pituitary gonadotropic principles would seem to be the best form of therapy in cases of gonadal hypofunction which have been shown to be secondary to failure of the anterior pituitary. Thyroid extract is a very

valuable aid to the treatment of sterility. Since nothing can be done for sterile adults with markedly and completely hypoplastic testes and ovaries, it is desirable for adolescents who present any endocrine symptoms, such as delayed appearance of the catamenia, to consult a physician and have treatment before it is too late and the developmental impulse is exhausted

Giant Cell Bone Tumor: Further Observations on Treatment

Carleton B. Peirce and Isadore Lampe, Ann Arbor, Mich. (Journal A. M. A., December 5, 1936), found that with thorough curettage, surgery alone is effective in the control of giant cell tumor of the bone. Contrary to their previously expressed belief, adequate curettage with or without cauterization has been as effective as curettage with irradiation. There are those cases in which the location of the tumor, the age or physical condition of the patient, or the loss of occupational time incident on surgical attack are real factors in the life of the patient. In these, irradiation offers symptomatic relief and anatomic improvement. Further, irradiation alone offers as much for the control or cure of giant cell tumor as either of the other methods. The comparison of surgery alone as of one hundred per cent is a fallacy in so small a group of cases. The character of the response of giant cell tumor to irradiation continues to substantiate the belief that the growth restraint induced is specific for the giant cell, and that giant cell tumor is essentially not a true neoplasm. Hence large or massive doses are theoretically of less value than smaller and more frequent amounts of radiation and may tend to be more irritating to the normal connective tissue elements. Cessation of increase in the size of the lesion and the disappearance of symptoms should be considered as an indication of favorable response, although reparative changes in the involved bone are not apparent for some time.

Primary Tularemic Ulcers in Pharynx

F. H. McGovern, University, Va. (Journal A. M. A., November 14, 1936), reports a case in which primary tularemic lesion was located in the pharynx. The clinical course was typical of tularemia; there was no evidence of a primary lesion on any part of the body other than the posterior wall of the pharynx and no other than cervical adenopathy was present. A positive agglutination for *Bacillus tularensis* was obtained in the third week of the disease in dilutions up to 1:1,280 in three separate laboratories. On direct questioning a history was obtained of picking ticks from the ears of the patient's pet dog and crushing them between her fingers one week before the sudden onset of sore throat and high fever. The infection was evidently carried to the mouth on fingers that had crushed infected dog ticks. Francis also believes that this is the probable mode of infection. If the organisms can be carried on the fingers to infect other parts of the body, it can probably also be carried to the pharynx. The eating of improperly cooked infected food is another way in which a primary lesion may occur. The relief of pharyngeal discomfort achieved by the one per cent mercurochrome spray is of interest in view of the report by the Camps on the intravenous use of mercurochrome. The result with arsphenamine could not be evaluated because of the inadequate dosage. The possibility of the disease in the pharynx should be borne in mind in districts such as Virginia, where tularemia is prevalent.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

PLASTIC SURGERY

Edited by

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By GEO. H. KIMBALL, M.D., F.A.C.S.

A Method of Tube Flap Formation. John Stage Davis, M.D., and Edward A. Kitlowski, M.D., Baltimore. Southern Medical Journal, December, 1936.

The authors discuss the technique of forming a tube flap which differs from the usual technique. Instead of making parallel skin incisions of equal length, they use parallel incisions which are staggered, so that when the tube is formed, greater length is secured; also the triangular areas near the pedicle can be closed more efficiently.

The article is illustrated by very fine photographs to make clear the difference in technique.

COMMENT: The authors are to be commended on a clear cut description for the useful variation of technique of tube flap formation.

The Repair of Cleft Palates Primarily Unsuccessfully Operated Upon. Earl C. Padgett, M.D., Kansas City, Mo.

The author points out that every surgeon who performs cleft palate surgery encounters failures. He states that some cases undoubtedly were operated improperly. In other instances some factor beyond the control of the surgeon may have caused simple failure of union or even a slough.

In a series of three hundred different patients operated upon for cleft palate, one hundred and forty-one were found to have been operated upon before, the majority had been operated upon more than once, and some gave a history of as many as five unsuccessful operations. Fifteen cases of the group were primarily unsuccessful cases of our own and one hundred and twenty-six had been previously operated upon by other surgeons.

For purposes of discussion these cases are divided into two large groups:

1. Group without absolute loss of tissue.
2. The group with a definite loss of tissue.

Discussion of Group No. 1, without loss of tissue:

These cases were operated according to the principles of the Dieffenbach-von Langenbeck operation in most instances. Usually in these cases no attempt was made to preserve the palatine artery. When the cleft was unduly wide or the palate unduly short, sectioning of the hamular process aided in relaxation. In some cases the shortened palate was lengthened by uniting the posterior pillars.

Discussion of Group No. 2, with loss of tissue:

These cases presented quite unique problems when the repair was effected successfully. These

patients presented defects which fell into two or even three groups.

1. Large midline loss in the hard palate:
2. A loss of part or most of one of the mucoperiosteal flaps of the hard palate.
3. A hole in the anterior palate or lateral palate which is directly adjacent to the alveolus.
4. A large defect at the hard palate-soft palate juncture.
5. Considerable loss of soft palate tissue.
6. An almost complete loss of tissue of the hard palate.

In group No. 1 with loss of moderate proportion, it was found possible to use a modification of the Dieffenbach-von Langenbeck operation with a fair degree of certainty of obtaining closure. When the hole was anterior a flap from lip or cheek was employed.

In group No. 2, usually a relatively long and broad cheek flap was employed in this case.

In group No. 3, some of these cases were repaired by a thin lengthwise flap from the wider and thicker of the two palatal flaps. If this procedure was not successful, a prosthesis was sometimes recommended.

In group No. 4, usually successfully closed by long lateral incisions and extending them well back thoroughly freeing palatal flaps. Sometimes this was reinforced by a cheek flap especially when the palate was short and union questionable.

In group No. 5, the Dieffenbach-von Langenbeck principle was used, plus suturing of the posterior pillars in some. In the ones who had had several operations previously and where sloughing had taken place in the soft palate or scarring to the point that mid line union seemed hopeless, a posterior pharyngeal flap was used.

In group No. 6, the extra-palatal tissue was employed. In two cases the soft palate was rebuilt by the use of posterior pharyngeal flap and the hard palate rebuilt by extra oral tissue.

The extra palate tissue is not a new procedure. It was unsuccessfully attempted by Blasius, by the use of a flap from the neck. Thiersch in 1867 and Rotter in 1869 used the principle successfully; von Eiselsberg and Blair have used this method successfully.

The author points out the dangers of the operation together with some of the conditions which should be present before its use is employed.

AUTHOR'S CONCLUSION: One might say that it is extremely rare that a patient, with cleft palate unsuccessfully operated upon, is seen in whom final result will be found to be about as good as if he had gained primary union at first operation, if the proper time selected for operation is indicated in a given condition. One must individualize the patient, the condition and procedure. Consider age of patient, likelihood of union, number of operations required and size of defect, and repair defect under conditions encountered. The posterior pharyngeal flap operation is a satisfactory operation when used to obtain union and giving length to a soft

palate in which the tissue loss has been considerable. As far as the proposition of prosthesis is concerned, the question may be decided when two conditions are fulfilled: first, whether or not the patient, or those responsible, wish the palate built in after the advantages and disadvantages of both methods have been explained, and second, if the operation is decided upon whether or not the operator can do the operation. The procedure is certainly not one to be recommended to all surgeons with whole-heartedness but in good hands it is not at all an unjustifiable procedure. Usually it is in the patient in whom the palate has been repaired just barely acceptably but too well to justify more radical methods, that one really sees the poorest functional results.

COMMENT: Dr. Padgett's article sets forth very clearly the various types of procedure for secondary operations in cleft palate. It is true that every surgeon who does a goodly number of palate operations encounters some failures. The cases successfully operated upon at the first operation without loss of tissue seem fairly easy to close at a second operation.

Two things, I think, happen. One is that the collateral circulation is more thoroughly established. Second, the palate flaps become thicker.

Possibly the fact that the patient is usually older may make the operation seem easier.

With experience I have become convinced that the majority of palates are best and most successfully operated upon in stages, beginning at the age of about two years.

Some of the modifications of the Dieffenbach-von Langenbeck technique have been employed here for secondary operations. Use of extra palate tissue has seemed to me a very formidable procedure. I believe this operation is indicated in some cases and should be used after the possibilities are thoroughly explained to the patient or the parents.

By CURT VON WEDEL, M.D.

In the October and December Journals of Surgery, Gynecology and Obstetrics, 1936, have appeared two splendid articles on the repair of palates, or rather of the soft palate and the partially destroyed palate.

The Repair of Cleft Palates Primarily Unsuccessfully Operated Upon. By Earl C. Padgett, M.D., Kansas City, Mo. Surgery, Gynecology and Obstetrics, October, 1936, Page 483.

I think this is a very splendid article on the subject. Dr. Padgett divides his subject into two groups: (1) the group with little or no loss of tissue and (2) the group with a definite loss of tissue. He reports on some three hundred different patients operated upon of whom one hundred and forty-one individuals had had previous operations.

GROUP I—WITHOUT ABSOLUTE LOSS OF TISSUE: On these he uses the principle of the Dieffenbach-von Langenbeck operation. He uses a long, lateral incision and attempts to preserve the palatine artery at all costs. When the trouble is found to be a soft palate he uses the posterior pillars, and in that way gets better relaxation and is able to elongate fully one-half or three-quarters of an inch. If there is a thin area at any place, he turns down a flap in the cheek.

GROUP II—LOSS OF TISSUE: He divides these into various headings: (1) a large midline loss in the central part of the hard palate, (2) a loss of a part or most of one of the flaps of the hard palate, (3) a hole in the anterior or lateral palate which was adjacent to the alveolus from which the mucoperiosteal covering has been lost, (4) a large

defect at the hard palate-soft palate juncture, (5) a considerable loss of soft palate tissue, and (6) an almost complete loss of the tissues of the hard palate.

No. 1.—LARGE MIDLINE LOSS IN THE HARD PALATE: He feels it is usually best to close these with a modification of the Dieffenbach-von Langenbeck operation. In some cases it was necessary to turn a lateral flap from the cheek, and in a few cases a modification of the Lane principles was used.

No. 2.—LOSS OF A PART OR MOST OF ONE OF THE MUCOPERIOSTEAL FLAPS OF THE HARD PALATE: The cheek flap is probably the best procedure. It may be necessary to reinforce this by turning down a flap of the Lane type. One must be very careful in cutting this cheek flap to be assured of an adequate blood supply in this flap.

No. 3.—A HOLE IN THE ANTERIOR PALATE OR LATERAL PALATE WHICH IS DIRECTLY ADJACENT TO THE ALVEOLUS: These are sometimes very hard to close. It may be better to use prosthesis.

No. 4.—A LARGE DEFECT AT THE HARD PALATE-SOFT PALATE JUNCTURE: He closes these with a modification of the Dieffenbach-von Langenbeck principle, going up on the cheeks on both sides to get additional tissue and at the same time cutting the hamular processes. He gives a table of the number of operations and the end results, which is excellent.

No. 5.—CONSIDERABLE DEFECT IN THE SOFT PALATE: If possible, he feels that one should close these with a modification of the Dieffenbach-von Langenbeck principle, but when a great deal of tissue has been lost and there is a good deal of scar present this, of course, can not be done. He then uses a pharyngeal flap operation. In turning up the flap from the posterior pharynx and allowing the upper portion of this flap to remain attached to the pharynx, there will be tissue enough to close the opening and ample space around either side of this flap. He feels that it is better to leave the pedicle attached at the pharynx as it aids in speech, but if the flap is in any way annoying, it can be cut across. He believes that this operation has a definite position, and while it may not be physiologically an ideal procedure, it will allow one to close a large defect in the soft palate, and will result in a surprisingly good functional result. He has had very little trouble with sinusitis resulting from this procedure.

No. 6.—ALMOST COMPLETE LOSS OF BOTH THE HARD AND SOFT PALATE: He advocates the use of several methods. One must be sure before one attempts to do anything on these that the patient is a good physical risk. One, of course, must use extrapalatal tissue. He goes into considerable length in describing flaps taken either from the arm or from the leg in doing these procedures. He, himself, feels that these procedures are justifiable even though there has been considerable criticism against their use.

In conclusion, he states that it is extremely rare that an individual with cleft palate unsuccessfully operated upon is seen in whom, if the proper time is selected for the operation which is indicated in a given condition, cannot be offered a good deal of improvement, and in some cases the final result will be found to be about as good as if he had gained primary union at the first operation.

A review of literature on the subject is given at the close of the article, and it is interesting to note that one of the first operations done in this country was performed by John C. Warren and recorded in the American Journal of Medical Science of 1828, Volume III, page 1. This volume is in my own personal library, and inasmuch as it is

short, I think it is well and exceedingly interesting to quote it verbatim.

"On an Operation for the Cure of Natural Fissure of the Soft Palate. By John C. Warren, M.D., Professor of Anatomy and Surgery in the Medical Institution of Harvard University, Boston.

"Some years ago I had occasion to perform an operation for remedying the natural fissure in the soft palate. At that time I understood the operation had been once done in Poland or Germany, and once by Professor Roux; but I sought in vain for details which might assist me in its performance. However, I executed it satisfactorily then, and have since repeated it; and therefore believed that an account of the manner in which it was effected might be useful, although I suppose it very possible that Professor Roux and others may have devised more ingenious methods.

"As the operation in the first case succeeded, and was imitated in the others, I shall describe it in connection with that case. The patient was a healthy young woman of sixteen. She was induced to apply for an operation, in consequence of the impracticability of distinctly articulating her words, so that her speech was offensive from its guttural tones, and not intelligible to those unaccustomed to it. The fissure began at the edge of the os palati, where the fleshy membrane was so thin as to be transparent. Its width was about three-quarters of an inch.

"The patient being well supported and secured, a piece of wood an inch wide, a little curved at the end, with a handle to be held by an assistant, was placed between the molar teeth on one side, to keep the mouth open. A sharp pointed curved bistoury was thrust through the top of the palate, above the angle of the fissure, and carried down on one edge of the fissure to its extremity. The same was done on the opposite side, thus cutting out a piece in the form of the letter V, including about a line from each edge. Next a hook with an eye in its extremity, of the form represented, in Pl. I., armed with a triple thread of strong silk, was passed doubled in the mouth, through the fissure and behind the palate. The palate was pierced by it, at one-third of the length of the fissure from the upper angle of the wound, so as to include about three lines of the edge of the soft palate. The eye with the ligature being seen, the latter was seized by a common hook and drawn out. The eyed hook was then drawn back, turned behind the palate, and the other edge transfixed in a similar manner. A second and a third stitch were passed in the same manner, the third being as near as possible to the lower end of the fissure. Then seizing the upper ligature, I found no difficulty in tying it with my fingers, without the aid of a 'serve-noeud.' The others were tied in the same manner, and the knots placed on one side of the wound, in order to prevent their pressing into the fissure. On drawing the third ligature I had the satisfaction to see the whole fissure closed.

"The patient was exhausted by the operation, but soon revived. She passed twenty-four hours without speaking, or taking a drop of liquid in her mouth. For two days more she took only a little water. On the fourth day I ascertained that the edges of the wound had perfectly united, except at the lower extremity, where a slight separation took place, which afterwards united, by means of an additional stitch. At the end of seven days I cut out the stitches, which were already loose. This patient left the hospital a day or two after. About two years subsequent to the operation I saw her, and found she swallowed perfectly, spoke very well, and was daily improving.

"During the prevalence of the influenza of 1826, I operated with some reluctance on a lad of eleven

years old, who had been brought a great distance for the purpose. A perfect union was effected, but at the end of three days he was seized with the influenza, and not understanding how to manage his cough, he tore open the adhesions, and I at once removed the stitches. This occurrence has led me to advise against the operation in children. The boy spoken of will undergo it a second time in the course of the next year.

"The principle difficulty I met with in this operation was in disengaging the ligature from the hook, after it had perforated the palate. In order to obviate this, I had hooks of various forms made afterwards by Weiss, of London; but none of them answered the purpose so well as the one here represented. I have thought that one with a movable point, made to slip from a socket in the hook, so that the point and the ligature might be drawn out together, would lessen this difficulty, and have had one constructed by Rose & Sellers, of which a drawing accompanied this paper. This has the same form as that I first used, but that the point is movable.

"If a needle without the movable point is used, care must be taken in drawing out the ligature to draw on each side from the concavity of the hook. If attention is not paid to this, it may happen, that in drawing out the ligature on the first side, you entirely disengage it from the hook, which must then be armed anew. And again, when you draw out the ligature on the second side, the hook may be retained by the ligature, which cannot then be withdrawn, unless the stitch is drawn from the wound. This last would be a worse mistake than the other. Both of these accidents are avoided if the point be movable. In this case the point and ligature are withdrawn together, by passing a common hook through the eye of the point. This point is to be armed anew with the opposite end of the ligature, and then passed on the second side of the fissure as on the first. There can be no danger of the point falling down the patient's throat, since it is secured by the ligature.

"I have been very desirous to try this operation on the case of natural fissure of both soft and hard palate, such as often accompanies the hare-lip. In such a case it might be justifiable to try the operation on an infant; for if a union of the soft palate could be produced at an early period of life, it is quite probable that a disposition would be produced to fill up the bony fissure.

"Whether in an adult any benefit could be derived from such an operation is doubtful. I shall embrace the first opportunity to making the trial."

Elongation of the Partially Cleft Palate. By James Barrett Brown, M.D., F.A.C.S., St. Louis, Missouri. From the Department of Surgery, Washington University School of Medicine, St. Louis, Missouri. Surgery, Gynecology and Obstetrics, December, 1936. Page 768.

Dr. Brown states that in the repair of cleft palates, the best possible functional result will require pliable tissue sufficiently long to meet the posterior wall of the pharynx in the sphincter-like action that closes the nose from the throat. (No palate that is not functionally good is any better than a dental plate. To be functionally good the palate must meet the posterior wall of the pharynx.)

Brown describes his operation which is a modification of the Dorrance procedure of the so-called push back operation. He divides his procedure into two operations:

I. In the first operation an incision is made from the anterior pillar all the way around the alveolar process to the opposite side, and the whole hard palate is elevated down to the palatine ar-

teries. These arteries are then elongated carefully by stretching them as they come out of their foramina. The hamulus is then freed and the tissue separated, and the tendon severed. This flap is then sutured into its advanced position. The anterior defect is covered smoothly with a pack of balsam of Peru and iodoform gauze.

II. In the second operation one merely freshens up the edges of defect and undermines it through the same lateral incision, to get mobilization. It is closed as one usually closes a soft palate.

He then summarizes the fifty-three operations that he has performed on thirty-two patients. He states he had hemorrhage in one case, that he has had no trouble with the blood supply, and neither has he had trouble with the anterior portion that has been denuded, as this heals in about thirty days and gives no trouble. He states that if these palates have been previously operated upon, one had better delay the flap.

These operations should not be done, as a rule, on children under eighteen months of age. It is best to do them in two stages; this procedure is not one of choice but the procedure that should be used when there is a soft palate or when there has been a loss from previous operations. He reports excellent end results, particularly so far as speech is concerned.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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Repair of the Ligaments of the Knee. Report of a New Operation for Repair of the Anterior Crucial Ligament. Willis C. Campbell. Surgery, Gynecology and Obstetrics, LXII, 964, June, 1936.

The writer discusses the indications for repair of the knee ligaments and describes the anatomy and mechanism of these ligaments. The most frequent and disabling injuries are those of the internal lateral ligament, the internal semi-lunar cartilage, and the anterior crucial ligament, either alone or in combination. In the writer's series there was no instance of injury of the external lateral ligament or of the posterior crucial ligament disabling enough to warrant operative measures.

An operative technique for replacement of the anterior crucial ligament is described and clearly illustrated. In brief, it consists of obtaining a strong piece of tendon, fascia, and capsule, one-third of an inch wide by eight inches long, through an incision just mesial to the patella; this is left attached at its distal end, and is then threaded through drill holes in the tibia and femur placed as nearly as possible in the line of the original anterior crucial ligament. The strip is sutured above and lateral to the periosteum and fascia lata, with the knee in one hundred and forty degrees of flexion. A posterior splint is applied, with the limb in full extension, and is worn for three weeks; then active and passive motion is started. The incision permits arthroscopy if necessary. Apparently excellent results have been obtained in nine cases.

The advantage of this procedure are "the extreme simplicity, minimum trauma, shorter incisions, and decrease in operating time."

Case of Malunion of Colles' Fracture and Its Orthopaedic Repair. A. B. Inclan. Cir. Ortop. y Traumatol., IV, 63, 1936.

Surgical intervention in cases of Colles' fracture with malunion should aim at the anatomical

reconstruction of the articular line of the radius, especially of the bistyloid line, and at the correction of the deformity. The author recommends an osteotomy of the radius at the height of the fracture with restoration of the epiphysis to its correct position and introduction of an osseous wedge at the site of the fracture, in order to lower the styloid process of the radius without using osteosynthetic material. A preliminary ulnar osteotomy is not necessary in adolescents and children on account of favorable anatomical conditions at this age. In adults such a preliminary procedure is unavoidable as it facilitates a proper setting of the radius; otherwise the interposition of the interosseous ligament and the pronator quadratus muscle interferes with reduction of the fragments. An osteotomy of the ulna with removal of a wedge involves the danger of non-union, as observed in the author's case. Pain, stiffness of the articulation, and weakness after exertion disappeared entirely after the surgical procedure.

Fractures of the Shaft and Neck of the Femur. Report of One Hundred and Nineteen Cases. Irwin E. Siris and C. J. Delaney. Am. Jr. Surg. XXXII, 277, May, 1936.

During the past fifteen years, there have been ten cases of fracture of the neck of the femur in the Children's Surgical Service, Bellevue Hospital; six of these were reported by Colonna. Two cases were treated by the authors with Russell traction, and the other two by the Whitman method. Three cases of fracture of the shafts of both femora were treated by the Russell method with good results.

One hundred and nineteen children with fracture of the femur were treated in five years—thirty by a modification of Bryant's overhead suspension; fifteen by reduction on the Hawley table, skin traction, and a plaster spica; and seventy-two by the Russell method. Except in cases of children under four, where Bryant's method was used, the Russell method was used in all cases as a routine, with uniformly satisfactory results. The Thomas splint was used by the ambulance surgeons in all cases. There was no residual shortening in one hundred and nine of the one hundred and fifteen cases of fracture of the shaft of the femur. The authors use a modified apparatus which holds the leg in abduction and internal rotation.

EYE, EAR, NOSE AND THROAT

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Meningococcus Conjunctivitis Followed by Septicemia and Beginning Meningitis. Fred M. Reese, M.D., Baltimore. American Journal of Ophthalmology, September, 1936.

Meningococcus conjunctivitis was a frequent involvement of cerebro-spinal meningitis before the advent of antimeningococcus serum. Since the therapeutic use of this agent, the complication rarely occurs. McKee, 1908, raised the question as to whether the infection of the conjunctiva was primary or secondary from the nose. Tillett and Brown, 1935, reported a large series of cases of meningitis. The mode of onset of their cases they divided into three classes, namely: 1. Cases with upper respiratory infection of one to three weeks' duration before evidence of meningitis. 2. Cases with the onset accompanied by upper-respiratory-tract symptoms, but different from the first group in a more severe and abrupt onset. 3. Cases with sudden and sometimes explosive onset, the symp-

toms being directly and primarily those of meningitis, without any preceding history of nose-and-throat infection. The author's case comes under this last classification.

A nurse, age 19, whose chief complaint was that one morning she awoke with a red uncomfortable eye. Her family history and past history was essentially negative. Examination at 9 a. m. of the day her complaint started showed a conjunctivitis of the right eye, mild in character, with a small amount of discharge and some swelling. The cornea was normal in appearance. Intraocular examination was negative. The left eye was normal. Argylol followed by boric acid irrigations were used hourly. A few hours later the eye was generally much worse, greater edema, more discharge and some pus. Smears at this time showed the presence of a gram-negative intra- and extracellular diplococcus. At this the history was elicited from the patient that she had been on duty very recently with a case of epidemic meningitis.

After hospitalization and treatment of the eye every thirty minutes for a few hours she had a chill and complained of headache and backache. At this time she had a temperature of 103.8, pulse 134, respiration 24, blood pressure 90/60, W. B. C. 13,800 with ninety per cent polymorphonuclear leucocytis. There was a large subconjunctival hemorrhage. The cornea remained clear despite an increased muco-purulent discharge. Nasal congestion was present, pharynx injected, and tongue coated. Neurologically she was negative; urine negative; spinal fluid clear, pressure normal, no increase of cells.

It was necessary to desensitize her to horse serum. After this was done ten cc. of polyvalent antimeningococcus serum was given intravenously (on the evening after she first noticed her illness in the morning). This caused her temperature to drop from 105.6 to 101 degrees. The following day the same intravenous injection was repeated three times: on the third day another 10 cc. was given. A positive Kernig with other signs developed on the third and fourth day. The patient however recovered without any untoward sequelae except a mild serum sickness.

Conjunctival, nose, throat, blood, and spinal fluid cultures showed meningococcus.

The author's summary: A case of meningitis is reported. The evidence in this case indicates that the conjunctiva was the actual portal of entry for the infecting organism.

Post-Operative Regeneration of the Mucous Membrane of the Paranasal sinuses. A Summary. Durwin Hall Brownell, MD., Ann Arbor, Mich. Archives of Otolaryngology, November, 1936.

The matter of regeneration of nasal mucous membrane should be of great importance to the nasal surgeon who oft times removes or destroys quite large areas of this tissue.

Carter in 1930 said: "Bare bone does not procure for itself another periosteum, nor does it remain alive. Ciliated epithelium once destroyed is never regenerated. Normal mucous glands do not reappear in the scar tissue which follows the destruction of mucous membrane, nor is this scar tissue capable of performing any physiologic function."

According to McGregor the ciliated epithelium of the sinuses is continuous with the squamous epithelium of the skin. Mosher says that the epithelium makes every effort to reform. Fisher found that cultures of epithelial tissue double their size in three or four days. Proetz thinks that many times the cilia regenerate along with the epithelium after a radical sinus exenation.

Dogs have been used in the experimental work by Coates, Ersner, Knowlton, McGregor and Hilding. Their experiments are reported and discussed.

Tornndorf in 1928 reported the case of a radical antrum operation dying one month later from an abscess of the liver. Autopsy showed granulation tissue covering all the antrum and ciliated columnar epithelium growing in from the naso-antral opening.

Latta and Schall reported evidence of rapid regeneration of the lining of an antrum which had undergone a radical exenation twenty-four days previously. At this time there were present basal cells which were capable of becoming either ciliated or goblet cells.

Semenov concluded after due observation on human beings that the regenerated mucous membrane always contained scar tissue but even this substitute for the normal mucous membrane was better than the presence of diseased mucous membrane containing polyps, cysts, abscesses, etc.

Goodyear stated that after a Caldwell-Luc operation, fibrous tissue occurred and that the scar tissue became covered with ciliated columnar epithelium.

McGregor observed twenty-four antrums and two frontal sinuses after radical operation. He reported twenty-five ciliated. The operation had attempted to remove all the mucous membrane. Sixteen days to nine years was the elapsed time from operation. At sixteen days there were many fibroblasts; at six months from operation there was a continuous layer of epithelium; at two years from operation there was a three-layered ciliated epithelium.

Gorham and Backer through naso-antral openings removed specimens for biopsy by means of a nasopharyngoscope from human beings. Two weeks from operation, the lining of the sinus is red and uneven; one month from operation, the lining is paler and smoother; three to five months from operation, the lining is relatively smooth, glistening, pale pink, with capillaries visible.

Macroscopically and microscopically the general inference is that the lining of the paranasal sinuses is regenerated after radical exenation, including the ciliated epithelium. This requires about three to five months time. The regeneration may not all take place from the nasal mucosa but may also come from the buccal mucosa.

A Method for the Correction of Entropion in Trachomatous Patients. Archimede Busacca, M.D. Sao Paulo, Brazil. Archives of Ophthalmology, November, 1936.

According to the author trachoma causes about fourteen per cent of the eye disorders in Brazil. He believes that he has an outline that will produce a clinical cure of trachoma. By clinical cure he means that the trachoma is not active. He thinks that probably the disease remains present in the latent stage even though a biopsy shows perfect cicatrization.

For five years several hundreds of cases have been treated by this method. When recurrences occur, a brief course of treatment clears the condition. He removes the superior tarsal bundles of the orbicularis muscle when the inflammatory process has stopped. He gives his explanation and therapy of this procedure.

Following is the author's outline for the operation:

1. Anaesthesia is produced, and the skin is incised in a line parallel to the free border of the lid about five mm. above it.
2. The skin is pulled inward by the thumb and freed to the height of the superior margin of

the tarsus with small incisions; then at this level an incision of the muscle is made through its thickness down to the tarsal plate.

3. The distal side of the cutaneous flap is freed inferiorly down to the cilia, and a small zone of the tarsus is denuded close to them.
4. All the muscular bundles between the superior and the inferior incisions of the muscle are removed with the scissors.
5. A linear incision is made on the tarsus about five to eight mm. from and parallel to the free border of the lid, care being taken not to reach the conjunctiva. Then thin slices of the tarsus are removed with the knife, from the cilia up to the tarsal incision, so that a small furrow-like incision will be formed in this region.
6. The inferior lip of the wound is sutured to the superior side of the tarsal flap, after it is assured that the suture will not pass between the cilia.

These different steps are illustrated with accompanying drawings.

The distance the skin incision is made from the margin of the lid depends on the condition of the lids. Incision too close to the margin of the lid will not give the necessary furrow or sinking in. Incision too far from the margin will produce a poor cosmetic effect.

If the skin incision has been made correctly it then serves as a guide for the distance at which the tarsal infection should be made. The correct position of the cilia must here be considered.

In the thinning of the tarsus the knife is directed perpendicularly against the tarsus directly behind the line of the cilia and then inclined about ninety degrees so that the edge is directed toward the line of incision already made on the tarsus. Care should be taken not to injure the roots of the cilia. The inferior lip of the wound should be sutured to the tarsal flap, using about five sutures; the superior lip of the flap is left alone.

Bandaging, indications for intermarginal incision, indications for the canthoplasty and a few other points are discussed in the closing of this original article.

Rupture of the Tympanic Membrane by Lightning. Dr. Horst Wullstein, (Prof. J. Zange's Clinic), Jena. *Munchener Medizinische Wochenschrift*, xx, May 15, 1936, 802. Abstracted by G. H. Bateman in the September, 1936, Edition of *The Journal of Laryngology and Otology*.

On June 24, 1935, a girl, age 14 years, was working in the fields when she was struck by lightning and rendered unconscious. This girl had no previous history of middle-ear disease. She remained unconscious for a quarter of an hour and on recovering she had a hot burning feeling in the body and the hair on the right side of the scalp was burnt. She had a wound on the right side of the head. On the first day she vomited once and complained of vertigo in the next few days. Immediately after the accident she complained of earache and was given some ear drops. Two days later the ear began to discharge. Deafness was noticed.

November 18, 1935. The girl showed scars on the wounded areas, and there was some purulent secretion in the right external auditory meatus. There was a large central perforation blocked by a polyp. There was some middle-ear deafness and slight lowering of the upper tone limit. Labyrinth tests showed no abnormality. There were slight alterations in the reflexes, those on the right being stronger than on the left. These changes were taken to be due to the lightning

Doubt arose as to whether the perforation had been present before the accident. However, Prof. Zange had seen the patient on July 17, 1935, and had then observed a recent perforation. This was taken to remove the possibility of the perforation being present before the accident because of the absence of a history of ear symptoms.

There is only one convincing case previously reported in the literature and that is by Urbantschitsch, *Monatsschrift für Ohrenheilk*, 59 Jg. 956, 1925.

INTERNAL MEDICINE

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By HUGH JETER, M.D., F.A.C.P., A.S.C.P.

A Standardized Technique for the Blood Sedimentation Test. By M. M. Wintrobe, M.D., Ph.D. and J. Walter Landsberg, Ph.Gl., B.Sc., Baltimore, Md. *The American Journal of the Medical Sciences*, Vol. 189, No. 1, January, 1935.

In this the authors call attention to the various practical points, sources of errors and different methods of sedimentation rate and recommend a test which in a manner standardizes the technique.

EFFECT OF ANTICOAGULANT. Reports of other investigators are reviewed and as a result of additional experimental data performed, it is concluded that a mixture of six mg. of ammonium oxalate and four mg. of potassium oxalate added to five cc. of blood is a satisfactory anticoagulant.

INFLUENCE OF BORE AND LENGTH OF TUBE. The length of the column of blood seems to have a greater influence upon the sedimentation than does the bore of the tube, except on tubes that are less than two mm. in internal diameter, the latter giving unsatisfactory results.

INCLINATION OF THE TUBE. Attention is called to the fact that this has been demonstrated to be an important factor and further experimentation confirms this conclusion. An inclination of as little as 2.3° causes an acceleration of thirty per cent.

EFFECT OF TEMPERATURE. This also proved to be an important factor. However, it is concluded that if the test is performed in the ordinary room temperature of the laboratory, the rate will be within practical limits of percentage of error.

CHANGES IN SUSPENSION STABILITY OF BLOOD as influenced by delay in carrying out the test was thoroughly investigated and it was found that after four hours, significant differences in the results may occur.

THE FOLLOWING FACTORS appear to exert no significant influence on sedimentation rate: (1) the specific gravity of the red corpuscles themselves, or their size, (2) aeration of the blood or loss of carbon dioxide; (3) the collection of blood from arteries or veins; (4) centrifuging blood and subsequently remixing the cells and plasma; (5) the ingestion of food, and (6) short violent exercise.

CONCENTRATION OF THE SUSPENSION. Considerable attention was paid to the concentration of the suspension. Attention is called to the fact that it has been repeatedly demonstrated that the concentration of the blood or the relation of cell volume to volume of plasma is a very important factor in influencing the sedimentation rate. The more dilute the blood the greater being the speed of settling. This, of course, applies in a prac-

tical manner to cases of various degrees of anemia, polycythemia, hydremia, etc.

SEDIMENTATION RATE IN NORMAL ADULTS.

In this connection the authors collected a large amount of blood from thirteen normal men and eight normal women and carried out the tests under six to nine different dilutions in each sample, and with sedimentation rate ranging from one to 98.5 mm. in one hour and the volume of packed red cells ranging from 52.5 to 1.5 cc. per 100 cc. of blood.

The tube used and recommended by these men is a hematocrit tube 110 mm. in length and three mm. in internal diameter. There are two scales, one which gives the sedimentation rate and the other, the volume of packed erythrocytes. In view of the fact that the greater the dilution of blood, the more rapid is the rate and vice versa. The authors have combined data and provided a chart which corrects the sedimentation rates for variations resulting from the temperature in concentration of red corpuscles as measured by volume of packed red cells. As a result by this method, a combined test is performed which gives not only the sedimentation rate, but the rate corrected according to cell volume and also the actual percentage of cells to the total volume of blood. The volume of white cells and platelets as well as the icterus index tests, may also be performed in connection with the procedure.

Several practical deductions are made as follows: Normal females have a higher average rate ranging from one to twenty mm. per hour and it also is significant that females show more fluctuation in the rate than do males. The range for normal men is one to ten mm.

Various observations seem to indicate that menstruation does not cause the rate to go beyond normal limits.

Interesting charts are given. The chart for correcting sedimentation rate for variation resulting from differences of concentration of red corpuscles is necessary for computing the actual result of this test.

COMMENT: The sedimentation test has proven to be of very definite value in many different types of disease. It has been extremely unfortunate that many different methods have been used and the many sources of error have not been consistently evaluated. This step toward standardization of a method is a very valuable contribution and the various factors which have been studied will contribute substantially to the reliability of the various methods which are in common use.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Carcinoma of the Body of the Uterus. By Charles C. Norris and F. Sidney Dunne, Philadelphia, Pa. *The American Journal of Obstetrics and Gynecology*, December, 1936, Page 982.

This is a report of two hundred and seventy-nine patients with carcinoma of the uterine body admitted to the hospital of the University of Pennsylvania from January 1, 1900, to January 1, 1935. Two hundred and eleven of these patients were admitted five or more years before 1935 and these form the basis of the five year results. Of these eighty-one per cent have been followed and all untraced patients are regarded as having died of carcinoma.

Though carcinoma of the fundus is often considered a post-menopausal disease, in this series 30.5 per cent were in the pre-menopausal age.

The condition was about as prevalent in those who had borne children as in those who had not. "Child bearing plays no part in the pre-disposition to fundal carcinoma."

"The chief symptoms are bleeding and discharge. Metrorrhagia was the first symptom noticed in 80.5 per cent of the cases."

The authors' conclusions are as follows:

"The average duration of symptoms was 17.9 months. If myomas and fundal carcinoma were associated, the average duration of symptoms was 21.8 months.

"Only 43.8 per cent of patients sought treatment prior to one year after the onset of symptoms.

"The pre-operative diagnosis was positive in 67.9 per cent of cases, suspected in 16.6 per cent, and unsuspected in 15.5 per cent.

"All uteri removed for what are believed to be benign lesions should be opened and the endometrial cavity inspected before the operation is completed.

"Diagnostic curettage is the most certain method of detecting the presence of early fundal carcinoma and may be relied upon in practically all cases.

"The association of myomas and fundal carcinoma occurred in 34.9 per cent of our cases.

"Of thirteen patients with involvement of the ovary, treated five or more years ago, six survived the five-year period, and in fourteen cases in which the parametrium was invaded, three survived the five year period.

"For uncomplicated cases, a radical panhysterectomy and bilateral salpingo-oophorectomy, followed by deep roentgen therapy, is the treatment of choice.

"When curettage is performed in a suspected case, a minimum of 1,200 mg. hours of radium irradiation should be employed. If broken-up particles of carcinoma are left behind in the uterus, the irradiation tends to prevent dissemination, and if the case proves to be benign, bleeding is checked.

"The five-year salvage in patients treated by hysterectomy was 47.8 per cent.

"The five-year salvage in patients treated by radium alone was 43.8 per cent.

"The operative mortality for the series was 3.4 per cent.

"In the patients treated by hysterectomy, the operative mortality was 4.3 per cent, and in patients treated by radium, it was 2.2 per cent.

"The absolute five-year salvage in the entire series was 44.5 per cent, and the relative five-year salvage was 46.1 per cent."

In the body of the article there is no statistical reason for the preference of following radical panhysterectomy by deep roentgen therapy as the treatment of choice, nor is there any statistical reason for introducing 1200 milligram hours of radium irradiation (an insufficient dosage for cure) in suspected cases.

COMMENTS: The preferable treatment for this disease in the minds of all, includes radical complete hysterectomy and bilateral salpingo-oophorectomy. The value of x-ray and radium therapy as an adjunct is a question that has as yet not been determined. If radium or x-ray are employed pre-operatively, they should be used in sufficient dosage to destroy neoplastic tissue and operation should not be attempted, principally because of technical difficulties, until at least four weeks

after the termination of the irradiation treatment. If post-operative irradiation is employed, the agency is naturally limited to roentgen therapy. Though there is no actual evidence to prove that this increases the cure rate, it is probably well to use it in order to feel that one has done everything possible to remove the malignancy and to destroy any possible residual cancer cells. However, it is well to remember that the fundamental feature of the preferable treatment for this disease is removal of the entire uterus and both uterine adnexa. This is naturally limited in application to the fairly good operative risk.

If those in whom there is a definite contra-indication to operation, radium and x-ray therapy produce surprisingly good results, though not quite as good as by the method of complete hysterectomy.

Because the positive diagnosis of carcinoma of the uterine fundus is so frequently made from curettings, it is well to call attention to the fact that in obtaining the curettings, all areas of the uterine cavity should be curetted and in examining the tissue various levels of the paraffin block should be cut in order not to miss small isolated areas of malignant tissue. Wenedll Long.

The Gynecologic Aspect of Human Sterility. By Samuel R. Meaker, Boston. *The Journal of the American Medical Association*, December 5, 1936. Page 1847.

The recent advances in diagnosis and treatment of sterility rest upon a better understanding of its etiology, and these new ideas may be reduced to three fundamental principles:

"First, in the great majority of cases of human infertility the cause of that defect is not some single abnormality but rather the summation or totality of several factors. Complete diagnostic studies show that the average childless couple presents 4.79 factors, each of which diminishes to some extent their capacity for conception." "Seventy per cent of couples who apply for the relief of childlessness show no single condition that would account for their difficulty. They do show, without exception, a group of causative factors of which each one lowers their fertility to some extent and of which the sum total depresses that fertility below the threshold of conception."

"Second, the multiple factors just discussed are partly genital and partly constitutional." "I should perhaps add that, according to the ideas of my associates, states of constitutional depression include not only endocrine insufficiencies but also various non-endocrine conditions such as chronic intoxication, metabolism disturbances of extrinsic origin, debility and general inferiority."

"Third, the several factors present in each case are seldom limited to one partner." "Even when an absolute cause is present, there are still in the background other factors, which become operative when the more obvious impediment is removed."

These remarks make clear the complex nature of the problem and the necessity for an elaborate diagnostic approach with the employment of urologist, gynecologist, internist, and endocrinologist. There is no worse fallacy than accepting the first discovered abnormality as the sole and only cause in a given patient.

He divides the gynecological factors of infertility into four important groups, excluding the rareties. The first of these is female genital hypoplasia. Second, endocervical mucus so thick and tenacious that spermatozoa are unable to penetrate it. Third partial or complete obstruction of the fallopian tubes constitutes an obvious impediment. Fourth, there is the serious matter of deficient oogenesis.

The gynecologic investigation of a sterile mating involves long series of routine procedures with particular reference to certain details that are not of great importance in ordinary gynecological cases such as: "Measurement of the uterine index, tests of tubal patency, study of the endocervical secretions, and post-coital examination."

The most obscure detail in every case of sterility is the question of defective ovulation. No method of examination has ever been sufficient to determine whether or not the ovaries actually liberate mature and normal eggs.

The method of approach to treatment is briefly summarized in the following paragraph:

"The way of treatment is clearly indicated by a complete diagnostic study. In general, one should aim to correct all the factors demonstrated as inimical to fertility. A multiple therapeutic approach gives results far better than those obtained in older days, when treatment was limited to one or two items. It does not follow, however, that complete treatment should be undertaken from the start since good judgment often dictates the wisdom of eliminating certain factors before others are attacked. Notably, it is essential to assure an adequate grade of male fertility before subjecting a wife to any therapeutic measures directed primarily against sterility."

COMMENT: During the past ten years Meaker has done much to improve our concept of this problem and he has aided greatly in establishing the systematic study, diagnosis and treatment of these patients. This article does not deal with the particular features of investigation, but summarizes the broad principles which cannot be forgotten if one is to obtain results. In so complex a study as that of a sterile mating, great detail is necessary but there is also the danger of being engulfed in detail to such an extent that the broad principles are obscured. Wendell Long.

Simple Cyst of the Liver. Report of a Case. By Harry J. Warthen, Richmond, Virginia, and V. H. Griffin, Nashville, Tennessee. *Southern Medical Journal*, December, 1936. Page 1178.

A negro woman thirty-eight years of age was admitted to hospital November 14, 1934, because of a greatly enlarged abdomen. The history indicated that the illness had begun February 10, 1934, when there was pain in the right chest, and evidences of a respiratory tract infection. About a week later there was noticeable enlargement of the abdomen which progressively and rapidly increased during the next four or five days. There was neither nausea nor vomiting. There was no abdominal pain. The chief complaint, subjectively, was weakness.

The family history was negative. The entire life had been spent in Virginia and New Jersey.

On admission there were evidences of considerable loss of weight, the mucous membranes were pale, the blood pressure 145/100, the hemoglobin percentage 38 (Sahli) and a red blood count of 3,440,000.

The abdomen was greatly distended by a mass, tense and dome-shaped, extending from the costal margin to the pelvis. The surface was smooth and symmetrical, with the exception of a smaller rounded mass in the upper left quadrant of the abdomen.

The provisional diagnosis was intra-abdominal cyst, probably arising from the right ovary.

At operation a large smooth cyst was encountered, the anterior wall being thin, tense, white, with mottled areas of blue. It was not adherent

to the parietal peritoneum, and was found to extend upward and to be continuous with the under surface of the right lobe of the liver.

When lifted out of the abdomen it was found that there were numerous adhesions of the posterior wall to the small intestines. A hole was accidentally made in the ilium. In order to facilitate the dissection, a trocar was introduced and 4,950 cc. of reddish brown fluid withdrawn without completely evacuating the cyst, the aspiration being hindered by the presence of a friable gray gummy material on the inside of it.

The wounded ilium was repaired and the cyst wall separated from the intestines. The upper portion of it was surrounded by "thin lappets of liver tissue over an area about twenty-five cm. in diameter." A line of cleavage was found and the cyst wall was completely removed, followed by moderate capillary oozing. There was no pedicle. Apparently the blood supply was secured through numerous small vessels from the structures adhering to it. Two small cigarette drains were placed in the defect on the under surface of the liver.

Following the operation, there was a transfusion of five hundred cc. of blood.

The pathological diagnosis was "a cyst of undetermined etiology, having a fibrous wall, presenting a chronic inflammatory response."

Appropriate laboratory procedures did not demonstrate pyogenic organisms, tuberculosis, hooklets or echinococci.

The convalescence was satisfactory, the patient being discharged twenty days after operation.

It appears that simple cysts of the liver are rarely encountered. The etiology is uncertain. It is suggested that they might be of biliary or lymphatic origin. Altogether, the authors do not seem to be very clear with reference to their conception of the etiology, but their report in the case indicates clever and skillful technical procedure in connection with the operation.

LeRoy Long.

Bilateral and Medial Aberrant Thyroid. By Harry C. Schmeisser, Memphis, Tennessee. Southern Medical Journal, December, 1936. Page 1174.

The definition of an aberrant thyroid by Schrag, in 1906, is quoted by the author:

"An aberrant thyroid is a mass of tissue having the structure of a normal or pathological thyroid gland and situated at some definite distance from the normal thyroid with which it has no connection."

There is a reference to Wolfler's division of aberrant thyroid tissue into two groups, one group arising from the medial anlagen; the other group arising from the lateral anlagen. The first group was reviewed by Wegelin in 1926, and the second group was reviewed by Moritz and Bayless in 1932. Wegelin found that the first group (those arising from the medial anlagen) might develop along the course of a thyroglossal duct, and that sometimes they are found behind the trachea or oesophagus.

It appears that bilateral aberrant thyroids are uncommon, and that a combination of bilateral and medial aberrant thyroid is still more uncommon. The author has observed this combination, and the following is a brief synopsis of the case reported:

A married white woman, twenty-five years of age, entered hospital because of an enlargement of the neck. At the age of thirteen she had noticed a knot on the anterior surface of the neck. Three or four years later there were some enlargements on the right side of the neck, and a little later

some on the left side. There was neither pain nor tenderness, but some discomfort from pressure.

The enlargements were discreet, and of various sizes. They appeared to be beneath platysma, but superficial to the deeper muscles, with the exception that on the left side of the neck they were partly covered by the sternocleidomastoid muscle. They were found both laterally and medially. One of the masses was removed for examination. The histological structure was characteristic of thyroid tissue.

In the case of the patient reported, the basal metabolic rate was normal on successive occasions. The principal difficulty seemed to be in connection with pressure from the various enlargements on the sides and on the front of the neck.

Operation was done in two stages. At the first operation the masses on the right side of the neck, all of them being immediately beneath the platysma, were removed. At a subsequent operation the masses in the front of the neck and on the left side were removed. Histological studies confirmed the clinical diagnosis of aberrant thyroids.

Based upon his investigation, the author concludes that these tumors appear in early life, the majority of them reporting for treatment in the third decade, but with a pre-operative existence of the tumors for about eleven years; that the ratio of males to females was one to three; that the tumors were more frequently on the right side, and in about fifteen per cent of the patients they were bilateral.

Cattell is quoted as making the statement that the diagnosis of lateral aberrant thyroids is rarely made before operation, and that no positive diagnosis can be made without biopsy.

LeRoy Long.

Local Medication of Upper Respiratory Tract

Clyde A. Heatly, Rochester, N. Y. (Journal A. M. A., December 5, 1936), declares that the use of local medications by the general practitioner in the treatment of diseases of the upper respiratory tract should be restricted for the most part to acute infections. It is to be emphasized that attempts to treat chronic disorders by such measures are fraught with serious danger until the diagnosis of the underlying pathologic condition has been thoroughly established. This as a rule requires examination by a specialist in this field. All too frequently cases are encountered in which local medications have been carried out over long periods before a serious underlying infection or new growth has been discovered. The resulting loss of time commonly leads to serious or even fatal consequences. In the early stages of acute pharyngitis the local application of silver nitrate (from five to twenty per cent), mild protein silver (ten or twenty per cent) or Mandl's solution often gives relief. Vigorous swabbing, however, should be avoided. Gargles, so frequently prescribed, are often useless, especially in children, because the contraction of the tongue and pharyngeal muscles prevents the solution from reaching the inflamed parts. They may, however, be used in the form of salt and soda, one-half teaspoonful each in a glass of warm water or Dobell's solution, 2 tablespoonfuls in a glass of warm water. In the more severe infections the use of hot salt and soda irrigations will be more effective. Lozenges containing small quantities of menthol, camphor, guaiac and codeine, orthoform tablets or calcidin-anesthetin troches lessen the discomfort in mild cases. In acute tonsillitis the most effective local treatment consists in irrigation of the throat every two hours with a warm solution containing one teaspoonful of sodium chloride and sodium bicarbonate in one pint

of water. Warm dextrose solution (fifty per cent) made with "Corn Syrup" one part and water two parts is also effective. When irrigations are not possible nor well tolerated a similar warm solution of salt and soda, potassium permanganate (1:5,000 solution) or acetylsalicylic acid (five tablets crushed in a glass of water) may be used as a gargle. The practice of frequent and vigorous swabbing is decidedly not recommended. In the common acute infectious disease fusospirochetal angina silver nitrate (from ten to twenty per cent), tincture of iodine, chromic acid (five per cent), copper sulfate (ten per cent), gentian violet, methylene blue, acriflavine base and mercurochrome have all been used successfully. The therapeutic indications in acute laryngitis require the control of inflammation, the release of spasm and the relief of obstructive dyspnea. Steam inhalations to which compound tincture of benzoin (one teaspoonful to a pint of water) is added constitute the most helpful local treatment. Menthol (0.65 Gm.) may be similarly employed. These may be given directly at three hour intervals and a steam kettle should be kept going constantly in the room. Few ear conditions are suitable for treatment by the general practitioner. In acute external otitis (boils) the external auditory canal may be gently cleaned with alcohol and then packed lightly with a narrow gauze wick soaked with aluminum acetate (saturated solution), ichthammol in glycerin (ten per cent) or mercurin (prescriptions E, F and G). Heat should be applied as constantly as possible and gives great relief. Vaccines may be of value in recurrent cases. Fungus infections (otomycosis) are best controlled by daily instillations of a two per cent solution of salicylic acid in alcohol (seventy per cent) together with the administration of potassium iodide by mouth. Infections caused by *Bacillus pyocyaneus* respond to acetic acid (two per cent solution). When earache is due to an acute catarrhal inflammation of the tympanic membrane, warm drops of phenol in glycerin (from five to ten per cent solution) repeated if necessary at three hour intervals for two or three doses often give relief.

Benzedrine Sulfate in Mood and Fatigue

Myerson (Arch. Neur. & Bsyeh., 30:816, October, 1936), suggests the use of Benzedrine Sulfate (ben-

zyl methyl carbinamine sulfate S. K. F.) to alleviate certain types of fatigue and depression.

When administered to normals suffering from fatigue and slight malaise due to insufficient rest or sleep, immediate benefit and relief of a pleasant type were experienced. To obtain this result ten mg. upon arising was usually sufficient. The effect lasted two hours or more. A dose of thirty mg. was apt to produce restlessness and over-excitability; and sleeplessness at night following administration in the late afternoon. No ill effects and no signs of craving were noted in any of the patients. Blood pressure was not appreciably affected by ten mg., but a rise sometimes followed a twenty mg. dose, and the use of the drug in the presence of hypertension is inadvisable. As an emergency measure for normals to dissipate the effects of a disordered night's sleep or insufficient rest, the drug is probably of benefit.

Benzedrine Sulfate was also given to a group of cases suffering from neuroses associated with depression, fatigue and anhedonia. Although the difficulty of a scientific evaluation of treatment in neuroses is recognized, Benzedrine seemed to have an ameliorative effect with a definite though limited value.

In only two cases was its action unfavorable. Its effects were not curative or permanent, but it tended to lessen the depression and increase the feeling of energy. Given in small divided doses in the morning its use is suggested during treatment by other means and while natural recovery is taking place.

In eighteen cases of dementia praecox, Benzedrine Sulfate was found to be without effect on catatonic or hebephrenic states.

JUST A REMINDER . . .

*Dues become delinquent
February 1st, 1937.*

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THE JOURNAL

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CRANIO-CEREBRAL INJURIES*

HARRY WILKINS, M.D., F.A.C.S.
OKLAHOMA CITY

The prevalence of head injuries today again warrants the consideration of the members of the surgical section for a few minutes of the time allotted to the surgery of trauma. Our present methods of rapid transit and the character of our industrial works to me seem the most important factors contributing to such injuries. It is therefore evident that trauma of this type is apt to occur wherever one may be, whether in an isolated district away from hospitals or in the more thickly populated districts where every means of medical treatment that is known may be made available to the patient. It is with the foregoing facts in mind that I have the temerity to discuss this subject just two years after that excellent and detailed paper was presented to this body by Dr. Loyal Davis of Chicago.

Trauma to the head in addition to the necessity of care as of injuries elsewhere in the body, requires certain special considerations because of the anatomy of the structures involved. We are dealing with a vital organ, the brain, encased in a rigid structure, the skull, and supplied with nourishment, fluids and oxygen by way of the blood stream entering through the arteries at the base or in the basilar region. Whereas trauma to any portion of the body is followed by extravasation of blood into the tissues and subsequent edema, special attention to these conditions is necessary in dealing with injuries to the brain. Swelling of the brain, encased as it is by a rigid covering, produces pressure which

results in disturbed circulation sometimes reaching a degree that is incompatible with life. The organic matter within the skull making up the brain, the vessel walls, cranial nerves and membranes is a fixed volume. Fluid both interstitial and in the ventricles and subarachnoid spaces is variable in quantity. Likewise the circulating blood is variable in amount. It has been pointed out by Fay that with an increase in interstitial fluid, that is cerebral edema, the other variable, the circulating blood, is decreased. Obviously an anoxemia accompanying such a condition not only causes widespread damage but may reach a state where death ensues. Our special efforts then must be directed toward prevention of and relief from anoxemia due to cerebral compression.

The brain is a semi-solid media capable of undergoing considerable deformity without damage of an appreciable degree. When this point has been passed damage to the brain results and subsequent changes occur depending on the amount of damage.

Nature has provided an excellent covering consisting, from the surface inward, of the scalp, the pericranium, the skull, the dura and the lesser meninges. Naturally any one or all of these may or may not be damaged from an injury that does irreparable damage to the brain. The reverse is also true and interruption of continuity of the covering may occur without appreciable damage to the brain.

In being called to see the patient suffering from a cranio-cerebral injury I feel that it is our primary duty to consider the

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

organism as a whole. We should then attempt to meet the requirements of the organism rather than confine our attentions to a single organ or structure such as the head. Emergency treatment then consists of rapidly summing up the general condition of the patient to better enable us to apply a more rational therapy. Move the patient as little as possible. Of course the patient should be moved to a protected place, either the home or hospital, but should not be transported long distances in the initial stage of the post-traumatic state. Following this, measures to combat shock are put into effect. These will vary with the situation confronting us but usually the measures to combat post-operative shock or shock produced by injury to other structures are applicable with one exception; that is regarding the use of morphine which will be discussed later. External heat, stimulants, particularly caffeine—sodium benzoate, fluids intravenously and subcutaneously are to be given when required. Open wounds should have a sterile dressing to aid in controlling hemorrhage and measures to dehydrate the patient are to be postponed until after recovery from shock. Temporary care of fractures in the extremities is warranted only in so far as found necessary in preventing increase in shock. Obviously with few exceptions, x-rays of the skull should be put off until later.

With these things having been done, a more careful neurological examination should be made. This enables one to estimate the amount of cerebral damage and serves as a basis for subsequent management. In this period observation should begin relative to the presence of massive hemorrhage causing compression, subarachnoid hemorrhage producing irritation of the meninges, or edema which in itself may cause compression to the degree that death ensues.

The phenomena of a rapid-rise in intracranial pressure is fairly characteristic. The systolic blood pressure increases and the diastolic increases but to a lesser degree, causing an increase in pulse pressure. A progressive slowing of the pulse with subsequent loss of consciousness and finally impaired use of one half of the body or pathological motor pathway signs completes the picture. This condition is a

result of rapid massive bleeding as from the middle meningeal artery that will result in a fatality from compression if the clot is not removed. Of course this necessitates an operative procedure as an emergency measure.

In the second phase of care x-ray plates may be made, lacerations of the scalp closed and fractures of the long bones should be reduced. Tetanus anti-toxin may be given and measures to prevent increasing intra-cranial pressure from cerebral edema should be instituted.

Most of the operative procedures necessary in the treatment of injuries to the head are carried out in the early part of this second phase. Lacerations of the scalp, even though small, warrant careful cleansing of the surrounding scalp by shaving and scrubbing with soap and water. Alcohol is in my opinion the best antiseptic to use in the wound. Chemicals of more caustic type interfere with healing. Closure of the lacerations in layers without drainage should be carefully attended to only after complete debridement.

More extensive damage to the covering of the brain may be handled in the same way but with preparation for a more extensive operative procedure. Bone fragments are elevated to permit debridement of wounds to the brain, control of hemorrhage and careful and complete closure of the dura by direct suture or by fascial transplant. Bone fragments are then replaced if they can be thoroughly cleaned with soap, water, saline and alcohol. The scalp is then closed as for simple laceration.

Massive hemorrhage as from rupture of the middle meningeal artery, or an acute massive subarachnoid or subdural hemorrhage is handled only by evacuation of the clot and control of the bleeding point. These are usually adequately handled through a classical subtemporal decompression opening. The more frequent but less rapid in occurrence is the subdural hematoma. Its symptoms are insidious in development, rarely showing changes of blood pressure or pulse, but may cause pupillary inequality and slightly xanthochromic spinal fluid, all following a more or less trivial injury. It is not infrequent that the condition persists from several

weeks even to a few months before symptoms reach a degree to warrant surgical consideration.

The final indication for operative treatment is the depressed fractures that are not compounded. Of course very slight depressions do not require elevation. Those of more than just an appreciable degree should always be cared for after shock has ended. Oft times a laceration of dura or brain beneath the depressed area would alone warrant operative correction. The possible irritation of the irregular mass of depressed bone is likewise sufficient reason for correction of the depression. These steps aid materially in the prevention of post-traumatic Jacksonian convulsions which may not occur until many years after the injury.

Methods to reduce edema of the brain and lower intra-cranial pressure of a dangerous degree have been introduced in the past few years to supplant the old operative procedures for decompression. Hyper-tonic solutions producing an osmotic process to reduce interstitial fluids have been administered by the intravenous route, by the oral route and as retention enemas. For a more even, continuous and prolonged effect the administration of a saturated solution of $MgSO_4$ as a retention enema as often as every three to four hours produced the best results. This does not induce the vomiting or general gastro-intestinal irritation that a similar drug produces when given by mouth. It has the additional advantage of removing the fluid from the body rather than merely shifting it into the blood stream from which position it will tend to go back into the tissues in time. As an adjunct to this measure glucose in fifty per cent solution may be given intravenously every three to four hours after shock has ended. It gives a more rapid loss of interstitial fluids but is less steady and a compensatory rise of pressure may occur if not fortified with retention enemas.

The patient's position in bed is important. After shock has been relieved or following operative procedures elevation of the patient's head and shoulders to a semi-sitting position and frequent shifting from side to side may not only aid in preventing pulmonary stasis but also encourages ven-

ous drainage from the head and decreases or prevents an increase in cerebral edema.

Subsequent to the period of shock, fluids and food must be supplied in quantities sufficient to maintain nourishment and proper metabolism. If the patient is able to take liquids and food by mouth, that is sufficient. If not intravenous glucose, saline subcutaneously or liquids by nasal tube should be given. We ordinarily limit such fluid intake to from 1500 cc. to 2500 cc. per day depending on the patient's size and condition. Removal of fluid by retention enemas should be carried on during this period.

The comfort of the patient is important. Attention to the body as a whole may reveal a full bladder, gaseous distention, a previously undiscovered fracture of a rib or long bone, or irritated skin, that on being corrected leaves the patient quiet and in a resting state. Sedation may be necessary when measures to reduce intra-cranial pressure and correction of irritation from other points in the body have failed to quiet the patient. We prefer to use the milder sedatives and they are used sparingly. Morphine is distinctly contraindicated since it not only masks the symptoms of intra-cranial pathology but actually, as shown by experiment, raises intra-cranial pressure. It is also a very dangerous drug in this condition because of its depressing effect on the respiratory center. Death from cranial injuries most frequently result from respiratory failure. I have seen respiratory depression develop to become the most distressing factor confronting the physician after morphine had been given. Codeine is much less depressing and often affords relief, particularly when used in conjunction with dehydration.

Spinal punctures are unnecessary as an aid to reducing intra-cranial pressure. There is danger of medullar failure from compression of the medulla in the foramen magnum when this procedure is resorted to in the presence of marked pressure. It does have its place, however, and that is for the removal of bloody spinal fluid. Within some forty-eight to seventy-two hours following an injury crenation of red cells in the fluid occurs liberating the chemical constituents of the cells. These chemicals produce an inflammatory reac-

tion identical with that of meningitis but without the presence of organism. Repeated punctures with gradual drainage of the contaminated fluid gives a fairly rapid improvement in the clinical symptoms. The conservative means of lowering the intra-cranial pressure is as a rule sufficient if used over a period of forty-eight hours or more to prevent untoward effect of spinal puncture.

Rest is one of the most important steps in caring for cerebral trauma. I know of nothing more important that we do to aid the patient in making a complete recovery than to give adequate rest. This will allow the maximum reparative process to take place. The length of time for the patient to remain at rest in bed is more or less arbitrary and must be governed by the patient's progress. Invariably the patient feels well enough to leave his bed before he should be permitted to do so. A minimum of two to three weeks bed rest should be insisted upon even in the minor injuries and longer periods advised depending on the degree of injury.

Contusions and lacerations of the brain occurring with injury may be sufficient to cause death. This is particularly true if the contusion is centrally located or in the brain stem. Less extensive changes respond to the reparative functions of our system if complications such as massive hemorrhage, cerebral edema and compound fractures or infections are prevented by the methods outlined above. Extensive changes in the cortex may improve to give a normal or near normal function or may persist as areas of degeneration with symptoms referable to the area involved. At a later date such changes may result in cortical irritation as evidenced by convulsions. The presence of convulsions in the post-traumatic case may result from disturbance in intra-cranial fluid equilibrium and therefore does not positively signify actual cerebral damage.

In summary I wish to point out the need for each of us to have a knowledge of the practical principles used in the treatment of cranio-cerebral injuries. The patient is best handled by one understanding the anatomical and physiological factors involved. The correction of pathological processes will necessitate careful observation over a considerable period of time.

Transportation of the patient in the immediate post-traumatic state is to be condemned as a dangerous and unwarranted action in most instances.

* * *

DISCUSSION

Dr. C. E. Northcutt, Ponca City:

Mr. Chairman and Dr. Wilkins—I first would like to compliment the chairman as well as his committee on their thoughtfulness in preparing such a program, so important not only to us but to the lay also, on this timely subject. Dr. Wilkins certainly has said an awful lot in a short length of time. I would like to make a few remarks that seem important to me along this line. I do not think that there is any other time in the history of medicine that the public itself as well as the industrial world is so dependent upon the end results that we obtain from our traumatic surgery, and especially the trauma of the brain. Now, because as we do know, we are living in a traumatic age, and it is also an age where most people are protected, and others from a financial view necessitate the burden to be thrown on the medical profession, even almost to where one has to have a legal degree to protect himself and the profession.

There are two main phases I think of. The first is the stage of shock. Now all of you are greatly interested in this stage of this type of work, because it is very necessary that we appreciate the full value and not permit ourselves to hastily pick up a patient and transport him several miles or several hundred miles where we can get better hospital and medical accommodations, because I am sure we all appreciate the well-known treatment for shock including, of course, as Dr. Wilkins has said, that the patient be moved as little as possible. There is but one variation and that is the use of opiates. I can heartily agree with Dr. Wilkins that no opiates should be given unless it be small doses of codeine, probably depending on the barbituric preparations. Opiates interfere with decompression processes as well as cover that most important symptom of progress that might be going on under the influence of the opiate, and that is our slowing of the respiration. We have to use surgical judgment when and how to do further

surgery. In decompression there are two phases, the mechanical, which is surgical, and the other physical and that is the dehydration process which is so in detail explained to you by the doctor. I can hardly agree with the conservativeness of the doctor in reference to spinal punctures in decompressing these patients. I think we have to use our surgical judgment well seasoned with experience in decompressing these patients. We realize the dangers of spinal puncture, but by using surgical judgment and gradually draining off the spinal fluid, often times we will save a life and also save permanent disability. The third phase bothers me. That is the rehabilitation or reconstructing these patients back to as near normal as possible after they have gone through the shock and the surgical procedure or the physical decompression. We are called upon now to decide and tell and go up on the witness stand as to the final outcome from the percentage point of view. Sometimes we feel badly when one doctor says one hundred per cent disability, another twenty-five per cent, and perhaps one says there is none at all. We must realize, therefore, that we do have traumatic neurosis. This traumatic neurosis may be temporary and it may be permanent, but I think the experienced physician can carry out his treatment with these patients and try to keep them away from some of their friends who come to see them and some of the legal profession, and give them some encouragement. For our self-preservation and

protection it is necessary that some member of the patient's family see us through. I am certainly interested in this particular subject because I know I am one of you who sees these cases and problems, more especially the end results. With regard to this third stage, it is important that we have the proper counsel and the proper qualifications before we get up on the witness stand and give testimony. It is ridiculous, some of the differences in opinion, and when one man says that this particular case has one hundred per cent disability and another says he is practically back to normal, that is a reflection on our integrity as well as our ability, and we must give those things the same consideration as the things the doctor has brought out in his paper. I want to thank you, Dr. Wilkins, for your splendid paper and I appreciate the chance to make these few remarks in discussion.

Dr. Risser:

As between the clinical examination and the x-ray, which is the one to be considered more?

Dr. Wilkins:

I wish to thank Dr. Northcutt for his kindness in discussing the paper and particularly in bringing out the points he did relative to the third phase. In answer to your question, Dr. Risser, I have no hesitancy in saying the clinical observation in my mind is by far more valuable than x-ray evidences of change in the skull. Thank you very much.

—o—

Differential Diagnosis of Fifth Nerve Neuralgia*

JESS D. HERRMANN, M.D.
OKLAHOMA CITY

The subject of fifth nerve neuralgia (trigeminal neuralgia) (tic douloureux) has been adequately covered in the literature in all of its phases, both in volume and in completeness. There seems to be little need of using the time of this society in mentioning the problem again as it is obvious that this brief discussion will in

no way compare with the masterful descriptions which fill the literature. On the other hand, gentlemen, our attention is constantly being called to patients who have had a major neuralgia of the fifth or trigeminal nerve for years without relief from their symptoms. Most of them, however, have not gone unmolested. In the beginning of their trouble a few teeth were removed which on examination appeared normal. Later all of their unoffending

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

teeth were removed. Then in desperation they have had para nasal sinus explorations without other indication than pain, peripheral neurectomies, chiropractic adjustments, all types of drugs and in one recent case the patient had had his eye removed. We know that all of these measures have not been advised by their physicians. Most of these patients have very definite ideas as to the cause of their pain and procedures to be used in removing that cause.

A factor which makes for multiplicity of therapeutic measures for control of this disease is that there are normally remissions during its course. The measure being used at the time of the remission receives the credit for the cure.

We have seen several cases with this disease who have had infected para nasal sinuses and infected teeth. These of course should be cared for, but no promises made as to the relief of their major pain as a result of the treatment.

The fact remains that there is a condition known as trigeminal or fifth nerve neuralgia which can be cured by interruption of the sensory fibers of the fifth nerve and should be done before the patient becomes a mental and physical wreck.

Trigeminal neuralgia usually occurs between the age of forty and eighty years. Occasionally it occurs in younger individuals. At first a sharp, shooting, lancinating pain appears in one of the divisions of the trigeminal nerve, usually the second or third. There has been no apparent exciting cause. The patient describes the pain as an electric shock, a red hot iron, a knife thrust in the face. The paroxysm of pain appears suddenly and leaves in the same manner after one to several seconds. Early in the disease the "attacks" or periods during which paroxysms occur are short and infrequent—being for one to three weeks once or twice a year. As the disease progresses the attacks become longer and more frequent until finally the patient may expect a paroxysm at most any time.

Between the paroxysms the patient is free from pain, but the fear of its return, the suspense of waiting is to many patients as incapacitating as the pain itself. The pain is referred to the terminal distribution of the branches of the trigeminal

nerve, to the lips, gums, teeth, tongue, nose and forehead.

The paroxysms of pain are usually induced by talking, chewing, swallowing, sudden noises or a draft of air, and in addition they may occur spontaneously. These patients often have not washed their faces or teeth for weeks, go unshaved and many of them are quite undernourished as a result of voluntary starvation. As to the degree of pain that these patients have, there is nothing more severe. Morphine has very little effect on this pain and this probably saves many of these unfortunates from becoming addicted to the drug.

On examination very little will be discovered. There is no disturbance in sensation over the painful zone. The patient will protect himself and draw away if attempts are made to touch the side of the face involved.

In making a differential diagnosis the following conditions must be present before a final diagnosis of trigeminal neuralgia is made as has been pointed out by Frazier¹:

1. No associated sensory disturbance over the trigeminal zone and no atrophy of muscles supplied by the motor root.
2. The pain must conform to the trigeminal zone and be referred to the terminal areas.
3. The pain must occur in paroxysms and is not continuous.
4. In the early stages of the disease there were periods of weeks during which time they were symptom free.

In addition there is usually some area which when stimulated will precipitate the pain. This is the so-called "trigger zone." It is also quite unusual to find the condition bilateral.

PAIN AS A RESULT OF PERIPHERAL STIMULATION OF THE FIFTH NERVE

It would seem that the pain accompanying dental or sinus infections could be differentiated from major trigeminal neuralgia. The pain is more or less constant with exacerbations and there is tenderness of the nerves over their foramina of exit. The history is usually one of short duration and clinical signs of infection are usually present.

A similar picture will be seen in cases of involvement of branches of the trigeminal nerve by invasion of neoplastic growths of the sinuses or naso-pharynx. As the tumor enlarges and destroys adjacent tissues the nerve fibers may be interrupted and an anesthesia of the corresponding cutaneous zone result. In all of these cases roentgenograms are an aid to diagnosis after a careful history and physical examination.

POST-ZOSTER NEURALGIA

A very painful neuralgia occasionally appears following herpes zoster. This is true of zoster involving the trigeminal nerve as well as of the spinal nerves. The history will reveal the onset with the skin eruption, and cutaneous scars of the original lesion can be seen on examination. In addition to the neuralgic pain there will be an accompanying hyperesthesia of the cutaneous field involved. The pain is more or less continuous and of a burning character.

The condition is rare but should be recognized as the treatment is different from that of the major neuralgia of the fifth nerve.

NEURALGIA FROM INTRA-CRANIAL TUMOR INVOLVEMENT

Pain over the distribution of the fifth nerve may result from tumors in the region of the cerebello-pontine angle. It is a rare symptom of the acoustic neuromas, the most frequent of the angle tumors. Several cases, however, have been reported in which the pain was similar to that of tic douloureux. In most cases however when the fifth nerve is involved at the angle there is evidence of involvement of other of the cranial nerves. The pain is more likely to be continuous and sensory disturbances of the cutaneous field are present.

Tumors of the gasserian ganglion, its sheath or in the parahypophyseal region may produce pain over the distribution of the trigeminal nerve. In tumors arising from the gasserian ganglion or its coverings pain is a constant symptom, but is more or less continuous and the paroxysms are not pronounced if present at all. There will be a hypesthesia or anesthesia over a cutaneous zone after a time and involvement of the motor function of the nerve

will eventually result. In cases of endotheliomas they often push their way through the dural opening for the sensory root and cause symptoms of a posterior fossa lesion.

In parahypophyseal lesions the neuralgias are ordinarily overshadowed by other symptoms. The pain is usually referable to the first division and is not paroxysmal in nature. On neurological examination other findings will be present to give a true insight into the existing condition. These findings are usually referable to the second, third, fourth or sixth cranial nerves and general pressure phenomena. Careful history and neurological examination will in most instances reveal the presence of an intra-cranial tumor.

GLOSSOPHARYNGEAL NEURALGIA

A neuralgia of the ninth nerve, the pain of which is comparable to that of tic douloureux, was first indicated by Harris. The point of differentiation lies in the distribution of the pain. These patients will often point to the angle of the mandible when asked where their pain is. On questioning however the pain is deep and not at the terminal distribution of the trigeminal nerve. It is localized in the region of the tonsil, base of the tongue, nasopharynx and occasionally to the ear. The paroxysms are produced by swallowing, not chewing, by pulling on the tongue or stimulation in the region of the tonsil such as touching the mucous membrane in this area with a piece of ice.

This is a true neuralgia of the ninth nerve and can be cured by intra-cranial section of the glossopharyngeal nerve.

ATYPICAL NEURALGIA

It must be kept in mind that in addition to the pain fibers carried to the face by the fifth cranial nerve there is another system of pain fibers accompanying the vascular tree. Patients can develop an atypical neuralgia as a result of irritation of these fibers. This syndrome has been thoroughly described by Fay.² The pain is dull, throbbing, aching and deeply situated in the tissues. It follows the distribution of the vascular tree and not the trigeminal nerve—unlike the true major neuralgia, paroxysms are not produced by peripheral stimulation over the zone supplied by the nerve but is prone to appear with emo-

tional upsets, fatigue and debilitating conditions. Onset of the pain is gradual and increases in degree as the day progresses and is of a constant nature.

On physical examination points of tenderness and hyperesthesia can be found along the arterial tree. The carotid, temporal, facial and occipital arteries should be palpated and if the pain is vascular in type there should be increased tenderness over the vessels on the side of the pain.

SPHENOPALATINE NEURALGIA

For sake of completeness we must mention those few cases of vague facial pain radiating to the shoulder which are relieved by cocainization or injection of the nasal ganglion. Sluder³ has described this condition and has named it "nasal ganglion neurosis." Most cases reported as having obtained relief from cocainization of the nasal ganglion have had pain about the eye, nose, maxilla and temple often radiating to the shoulder. The pain is usually dull, throbbing and aching in type and more or less constant. There are in addition vasomotor disturbances as expressed by sudden flushing or pallor, pupillary dilatation and salivation. These are true disturbances of the sympathetic nervous system and our knowledge of the pains of sympathetic origin is far from complete.

In conclusion may I stress the importance of careful consideration of these patients with facial pains. The true case of trigeminal neuralgia will have no sensory changes, the pain will occur in paroxysms, conform to the distribution of the trigeminal nerve and be referred to its terminal branches. Furthermore during the early stages of the disease there were periods of weeks during which there was no pain.

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DISCUSSION

Dr. Marvin D. Henley, Tulsa:

Dr. Hermann's paper has opened a subject that could be discussed at great length. He has covered the subject with his usual thoroughness and leaves little to

add. I think this is one of the finest presentations that has been made here, and it shows that a presentation of this subject is not only of marked interest but also of clinical value. This has been rather looked on as an illegitimate child of medicine, and this attitude is possibly one of the causes contributing to the catastrophies of the diversified ineffective treatments instigated. There is much careful observation, rational conservatism and common sense in this paper.

From a practical standpoint the most important task to me in the diagnosis is the discrimination between cases of idiopathic major neuralgia and trigeminal neuralgia due to organic lesion of the nerve or its roots.

Not infrequently in the major trigeminal neuralgia I have found that when the tongue is involved, a metallic taste is sometimes described by the sufferer.

Dr. Herrmann speaks of the major neuralgia. I would like to mention in passing the minor neuralgias under which are classed the varieties of facial pain which are secondary to disease of the various local structures such as the teeth, the eye, the ear, the nose, and the tongue. The pain can be distinguished by certain features as belonging to one or other of two types. The first is a true neuralgia, that is to say a pain which is distributed along the course of one or more divisions of the trigeminal nerve, usually starting in the neighborhood of the diseased structures and associated with tenderness along the affected branches of the nerve. The second is a visceral pain, referred to some spot which may be at a distance from the disease, in which case it is usually not accompanied by decided tenderness along the course of the nerve to which the pain is referred, though there may be superficial hyperaesthesia.

Some of the other diseases which occur to me which sometimes cloud the issue are: migraine, gummatous meningitis, gummatous periostitis, tabes dorsalis, iritis, glaucoma, and malignancy.

Every otolaryngologist has in reserve some scheme of differential diagnosis of the fifth nerve neuralgia, which he brings forth as the occasion demands, but it is particularly fitting that this subject mat-

ter should be presented from the broader point of view of the brain surgeon.

Dr. Herrmann has presented a clean cut differential diagnosis of the fifth nerve

neuralgia, and the members of this section of the *Oklahoma State Medical Association* are indebted to him for renovating this subject matter.

O

UROLOGIC BACKACHE*

A. R. RUSSELL, M.D.
McALESTER

KIDNEY

That kidney diseases, as well as those of other genito-urinary organs, do produce backache, and this, often of the most intense character, there is no doubt. Consequently I shall endeavor to give you a brief summary of the conditions that do cause it, and our methods for differentiating it from the pain due to bone and joint lesions.

As a rule, backache is produced by a kidney condition only when drainage is interfered with, such as by blocking from stones, infection or stricture, either intrinsic or extrinsic, from renal enlargement, congenital or neoplastic, and from malposition.

The most frequent causes of acute unilateral high backache of kidney origin are stones and infection. The symptoms of these are classical and accurate investigation will reveal their true nature. Urinary examination with the detection of blood cells, or pus and bacteria, x-ray examination giving its important information, and finally the ureteral catheter, will solve the trouble.

It should be urged at this point, the employment of the ureteral catheter in the acute renal retentions from infection. The acutely infected kidney commonly designated as pyelitis, but which is almost invariably a pyelonephritis, with retention from edema at the uretero-pelvic juncture, is too often allowed to remain under medical care by the internal administration of alkalies and the ingestion of copious amounts of water. The retained septic

products are thus forced into the substance of the kidney, certainly jeopardizing the integrity of that organ until such times as nature sees fit to issue a spontaneous evacuation.

The chronic high backache, the result of a silent, insidious hydronephrosis from renal or ureteral block with negative evidence of disease by the x-ray and urinary findings, is frequently deceptive and may exist for months or years without recognition. It is only translated by thorough scientific urologic study, ureteral catheter and radiography with pyelography.

On numerous occasions you may see an unexplained chronic high backache determined by finding retention in the renal pelvis resulting from congenital or acquired stricture of the ureter, aberrant vessel, or pressure from neighboring lesions without gross evidence of tumor mass and with negative radiological and urinary findings. In all chronic high backaches, particularly if unilateral, hydronephrosis must be borne in mind. Very frequently such a condition is bilateral and a bilateral high backache may exist from the same origin.

Other rare kidney conditions productive of backache are the congenital lesions, such as polycystic, horseshoe, or ectopic kidney. Such backaches have tendencies to be more central or bilateral and have an equal tendency to fluctuate, involving first one side and then the other.

In renal tumors the backache may result from pressure of the growth or from metastatic involvement of the spine.

Ptosed and movable kidneys: It is remarkable that some ptosed and freely

*Read before the Southeastern Oklahoma Medical Association in semi-annual session at Durant, Okla., December 10, 1936.

movable or floating kidneys cause no pain at all. This is due to the fact that the ureter is not kinked and there is no interference with drainage, for so long as there is no obstruction to the flow of urine down the ureter, the patient will experience no pain. The character of the pain in the ptosed and movable kidney where obstruction exists, is of a dull ache in character, often with exacerbations of sharp spasms, so similar to that of spondylitis and lumbago. The differential diagnosis here is easy, because the definite diagnostic data obtained by cystoscopy and x-ray, is conclusive evidence of the causative factor in the production of the pain.

All obstructive lesions of the ureter, stricture, kinks, stone, tumors and pressure from without, such as a pregnant uterus or abdominal or pelvic tumor cause obstruction and back pressure with resultant dilatation of the ureter and pelvis of the kidney and pain. The differential diagnosis of all these conditions can usually be promptly made by cystoscopy and pyeloureterograms. Where spondylitis exists in conjunction with any of the above conditions, it behooves the urologist to differentiate spondylitis as a factor in the production of the pain.

Backache from ectopic kidney is more likely than any other type of kidney to be confused with some pelvic, sacro-iliac or sacro-lumbar disturbance. On account of its low position, usually over the sacro-iliac synchondrosis, back symptoms in this neighborhood are more likely to occur. Some cases of acute backache over the sacro-iliac region may be due to stone in the pelvic ureter, and the acute colic referred entirely to this neighborhood with no reflection elsewhere.

Nephritis: The congestion due to nephritis may or may not cause pain in the back. It is usually noticed that backache is especially present when hemorrhagic nephritis occurs. The differential diagnosis as a rule is easy, because the condition can be so definitely proven by an examination of the urine, together with the systemic symptoms such as nausea, vomiting, oedema, headache and increased blood pressure.

The acute and chronic pyogenic inflammations of the kidneys: In these condi-

tions congestion and stasis often produce backache, ranging from a dull heavy ache to the most intense kidney colic.

The differential diagnosis is also easy in the acute types, because of the urinary findings and general symptoms. In the chronic types, there is only an occasional pus cell found in the urine; where the backache and tenderness is out of proportion to the urinary findings and the x-ray demonstrates a spondylitis, it may tax our ingenuity to arrive at the real solution of the problem. All the refinements of a urological as well as orthopedic examination must be used in order to make a correct diagnosis.

While the kidneys seldom contribute to the low backache, the type which I take it we are here particularly to discuss, the lower urinary tract and the genital organs assume a paramount position in the production of this condition.

PROSTATE

Diseases of the prostate and seminal vesicles are probably in the background of as many low backaches as any other pathological condition. They may contribute to this complaint in a general and in a special way. In a general way by toxemia and metastasis, and in a special way by pressure or adhesions with reflections.

The low backache occurring most pronouncedly in the early morning, in many instances awakening patients and making motion very uncomfortable but improving on motion and gradually abating as the day progresses, is the typical backache of prostate and seminal vesicle origin. Since the prostate is not a urinary organ, but offers itself in urinary symptomatology only through obstruction or urethral irritation, the majority of the chronic infections of this gland and of the vesicles produce no urinary symptoms which would suggest their disease, and hence reflected pain, such as lumbago, is not suspected as originating from these structures. Indeed, the reflected pains and the pressure phenomena of prostatic disease, particularly in younger individuals, are most common symptoms of disease. Some patients with sclerotic prostates and vesical neck contracture, having a persistent backache may be relieved on removing the obstruc-

tion by means of punch operation or trans-urethral prostatic resection.

Often the origin is in the prostate and vesicles, some due to an association of disease in the gland through pressure and adhesions plus changes in the bone or joint surfaces due to extension of either inflammation or tumor growth. In many instances the prostate and vesicles are swollen and produce symptoms through pressure alone.

In the typical case, with backache, pains in the perineum, pain or heaviness in the testicles, frequency, nocturia, premature ejaculations which may be blood stained, lassitude and loss of sexual vigor, the diagnosis is easy, but in that type where the chief symptom is backache and an x-ray shows definite evidence of spondylitis, and with a small prostate and barely palpable vesicles, with only a few pus cells in the fluid, expressed after massage, it is rather difficult to convince the patient that his backache is due to inflammation of his prostate and vesicles, especially when he has never had any venereal disease and no definite symptoms pointing to his genito-urinary organs.

One should rely for diagnosis on the type of the backache, its intermittent character, its usual extension down the back of the thigh and back and outer side of leg and along the posterior limit of the crest of the ilium; its improvement on exercise and its return and exacerbation on sitting for any length of time, *e. h.*, when playing cards or when riding in an auto or railroad car. The feel of the prostate is also important as well as the character and contents of the fluid, expressed on massage, and the fact that the vesicles are palpable. (You cannot palpate a normal vesicle.)

In some cases the pain of seminal vesiculitis and prostatitis may be so severe as to almost simulate renal colic. There are patients who receive prompt and immediate relief by massage and emptying of the ducts. The ones with marked sclerosis and adhesions are much more prone to resist therapy and require protracted treatment. Quite a definite percentage of long continued prostatic and vesical infections are associated with lumbo-sacral arthritis and need not only careful urological therapy but also proper orthopedic attention.

In women the urethra and the trigone contribute, alone and in association with disease of the pelvic organs to the production of this complaint. In many instances urinary symptoms may be present, such as frequency, urgency and pain, along with the backache.

Strictures of the urethra are not at all uncommon and dilatations and corrections will occasionally produce a pleasing result.

CARCINOMA OF THE PROSTATE

Backache, low lumbar and sacral in location and usually severe, frequently accompanies carcinoma of the prostate. This is especially marked when there has been metastasis to the lumbar spine and pelvic bones.

Carcinoma of the prostate is a frequent source of backache, either from pressure upon its capsule or from implication of the pelvic nerves by periprostatic inflammatory reaction or carcinomatous infiltration. Frequently the severe backache from carcinoma is the result of bone metastasis. Hence, all carcinoma of the prostate should have thorough radiological study.

The backache resulting from carcinomatous changes in a gland is particularly prone to have associated pain along the sciatic and in the hip joint. Usually urinary symptoms will appear and attract attention but in some instances the backache or the sciatica is the original and predominant symptom. Hence, severe backache in a man beyond middle life, regardless of urinary symptoms, should call for a rectal examination and if hardness, either localized or general, is elicited, carcinoma is almost sure to exist.

In the backache of late carcinoma where there is a bony hardness of the prostate and when metastasis has occurred, the x-ray makes the diagnosis positive; but in the early cases when the prostate is of doubtful induration and no metastasis has occurred, the diagnosis can only be confirmed by obtaining a section from the prostate for microscopical examination.

It is however apparent that an examination of the prostate and vesicles not only by palpation but by expression of secretion and through examination of the contents, is important in any case of low backache. The other urinary and genital organs may

be expected to contribute far less frequently than the internal genitalia just described.

Occasionally a bladder tumor, by infiltration of the ureteral orifice, one or both, may cause a unilateral or bilateral backache due to renal retention. Such tumors

by extension of the growth outside of the bladder with involvement of the pelvic nerves, or by bone metastasis may also produce back pain. These symptoms appear late and are usually preceded by the cardinal emblem of bladder tumor, namely hemorrhage.

UNDULANT FEVER (MALTA FEVER)

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Probably every physician has at some time in his career seen cases of fever that he has not been able to diagnose to his complete satisfaction. In the last twenty-five years, fevers of undetermined origin have been encountered, watched closely, treated symptomatically, and recovery has followed in a majority of cases. This group of undetermined fevers has gradually been reduced, largely through the use of more effective laboratory methods as diagnostic aids. The recognition of typhoid and paratyphoid fever, the various dysenteries, malaria, tuberculosis, tularemia, typhus fever and Rocky Mountain spotted fever, have all served to clarify many of the obscure febrile disorders.

Recently, recognition of undulant fever (Malta fever) in the United States, and subsequently, the relation of this malady to infectious abortion of livestock is another important contribution to our knowledge of febrile diseases in this country. Undulant fever is a disease primarily of livestock—secondarily, of man. It is a general infection with *Brucella* organism and may be classed with the specific bacteriemias such as typhoid fever.

HISTORICAL

In 1861, Marston in Malta, definitely distinguished the disease clinically from typhus and typhoid fever for which it had been diagnosed before this time. The disease was called Malta fever because it was first discovered in Malta. In 1886, the *Brucella* organism was first discovered by Sir David Bruce, by recovering the organisms from the blood and spleen of patients, cul-

tivating the organisms and producing the disease in monkeys. 1891, Wright in England, showed that the blood of patients contained agglutins against *Brucella melitensis*. In 1896, a Danish veterinarian discovered the cause of contagious abortion in cattle which he called *Brucella* abortion. In 1904-1906, Bruce discovered that goats were the chief reservoir of the disease in Malta, usually harboring the organism in the milk and urine without any evidence of illness.

In 1916, Good and Smith isolated *Brucella* abortion organisms from pigs which had aborted and this animal has since been shown to be an important source of infection to man, especially in slaughtering houses. Two more apparently unrelated diseases can hardly be imagined, yet Alice Evans, in 1918, showed by laboratory methods that the Bang's *Brucella* and the Bruce micrococcus are indistinguishable.

INCIDENCE

The disease is now recognized as an important public health problem in this coun-

REPORTED CASES AND DEATHS 1925-1936

Year	Oklahoma		United States	
	Cases	Deaths	Cases	Deaths
1925			4	
1926			448	
1927			217	41
1928			647	
1929	4	0	552	41
1930	2	0	1420	63
1931	13	2	1351	65
1932	5	1	1326	71
1933	15	2	1659	72
1934	4	0	1887	
1935	10	2	1897	
1936 to Aug. 1	25			

try. Cases are being reported from every state in the United States. In 1906, Craig reported the first case in the United States, this being a nurse in Washington, D. C.

INCIDENCE IN CATTLE

The Federal and State Veterinary Department in Oklahoma report on testing for Bang's disease in cattle in Oklahoma for 1935 shows twelve per cent reacting.

EPIDEMIOLOGICAL

Combining the individual investigations of Surgeon Hasseltine and Acting Assistant Surgeon Hardy, there is epidemiological data on four hundred and forty-two cases. They divide the cases into three groups as follows:

1. One hundred and ninety-eight cases (one hundred and three males, ninety-five females) that had little or no contact with livestock and whose probable source of infection was raw dairy products.
2. Forty-three cases (forty-two males, one female) living in cities and having direct contact with livestock in slaughter houses or meat packing establishments, whose most probable source of infection was contact with carcasses of infected hogs.
3. Two hundred cases (one hundred and ninety-one males, nine females) living on farms and having frequent contact with livestock and also using raw milk products whose probable source of infection is contact with infected livestock and use of raw milk products.

From these figures it appears that about forty-seven per cent probably contact the disease through the use of raw milk products, nine per cent contact the disease as a result of their daily occupation in handling meat and forty-four per cent received their infection as a result of contact with infected livestock on farms combined with the use of raw dairy products.

MORPHOLOGY

The *Brucella* organism is a small gram negative organism of cocoidal or short rod shape, staining with ordinary analine dyes, and occurring singly, or in pairs, sometimes in short chains.

There are at least three strains of the *Brucella* organism.

1. *Caprine*: (Variety B *Melitensis*.) Carries the disease in goats.
2. *Porcine*: (Variety B *Suis*.) Carries the disease in hogs.
3. *Bovine*: (Variety B *Abortus*.) Carries the disease in cattle.

All three strains may infect susceptible domestic animals or man.

The *Porcine* strain is the most serious in man, the *abortus* the least serious. Man seems to have a high grade of resistance to the abortive strain, as is commonly found in milk. The first generation of the organisms obtained from blood or urine or feces, grow very slowly on artificial culture media. The *Melitensis* and *Suis* grow in ordinary atmospheric conditions but the *abortus* require atmosphere containing about one per cent of CO² by volume.

INCUBATION PERIOD

The incubation period is about fourteen days. However, cases have been reported from five to six days, even up to one month or longer.

SOURCE OF INFECTION

Infection is contracted through the use of milk and milk products, or by handling of infected animals or carcasses of animals. In handling the aborted placenta of an infected abortive animal, the organism may enter through a break in the skin.

SYMPTOMS IN MAN

The onset is usually insidious, very similar to typhoid fever. However, it may be sudden with high fever, and accompanied with a great deal of pain in various parts of the body, particularly in the muscles and joints. Usually the fever increases slowly accompanied by headache, pain and constipation; the temperature may range from sub-normal to 105 degrees in the afternoon. After the temperature has risen by irregular steps to its maximum, it usually declines by lysis, and either remains normal or sub-normal for a period of a few days, followed by a recurrence in temperature, though not as high as the initial rise. These recurrences may be repeated several times. It is through these temperamental waves that the appropri-

ateness of the term "Undulant Fever" is recognized.

Sweating is a marked characteristic feature of the disease and is at times quite profuse. Sweats usually occur while the patient is sleeping regardless of the time of day. Weakness is a constant symptom. It may be the first sign complained of and before any fever is noted.

It is quite often the case that the patient feels quite well in the morning but by afternoon is exhausted and ready to give up any form of work or exercise. Pain may be slight or very severe. The author recalls a case who complained of very severe headaches and marked pains in lower limbs. As the disease progresses there is loss of appetite and weight. At the height of the malady even with an excessively high temperature, the apathetic, toxemic state associated with typhoid fever is absent.

There is also anemia as the disease advances. Haemoglobin may be far below normal. There is also usually a leucopenia, there being definite decrease in the polymorphonuclears and a corresponding increase in the large mononuclear cells.

On physical examination there is very little to find except fever. The patient does not appear overly sick even when the temperature is high. The spleen is often found to be moderately enlarged, pulse rate is usually faster than is common in cases of typhoid fever. However, the patient may have a slow pulse, also there does not appear to be a toxic condition. The patient may be up and about except when the temperature is unusually high.

AGGLUTINATION TESTS

A valuable aid in the diagnosis of undulant fever is the agglutination test. The rapid or plate method requires less equipment and can be made in a few minutes, but all positives by this method should be followed by the test tube method to determine the titre in various dilutions. Formerly it was commonly held that a patient should show an agglutination in dilutions up to 1 - 80, however, it has been found about six percent of infected persons remain negative. Accordingly there is no diagnostic titre. However, a strongly positive sera has more weight.

OPSONO-CYTOPHAGIC TEST

The cytophagic activity of the leucocytes of the patient's blood may be used to determine the patient's resistance developed toward the *Brucella* organism. This test should be carried out within six hours after the blood is drawn. The average number of the *Brucella* organisms ingested by twenty-five cells chosen at random is determined. Huddleston adapted the following classification:

Slight Phagocytosis: 1-19 Bacteria per cell +

Moderate Phagocytosis: 20-39 Bacteria per cell ++

Marked Phagocytosis: 40 or more Bacteria per cell +++

SKIN TESTS

To determine the sensitivity to the *Brucella* organism an intradermal injection of a suitable antigen is carried out. Angle of Kansas City, is using a killed vaccine of *Brucella Suis* (fifty per cent), *Abortus* (fifty per cent) containing six billion *Brucella* organisms per cc. . . . 0.04 cc. is injected intradermally. If the reading is delayed to the fifth or sixth day the pseudo reaction may be eliminated. At this time a positive reaction shows an indurated elevated nodule with varying degree of erythema at the site of the injection. There may be a slight necrosis and exfoliation as the elevation recedes.

The nodule is well defined and persists for a month or more. Infected persons tend to become positive within two weeks after onset and remain so for life.

Huddleston recommends using the nucleo-protein fraction obtained from the *Brucella Abortus* strain. The test is made by injecting 0.1 cc. of the fluid intradermally. The size of the local reaction which is characterized by a circumscribed erythema and slight edema may vary from one to three inches in diameter. It is read twenty-four hours after injection, and may persist for forty-eight hours or ninety-six hours. There is rarely, if ever, any necrosis or sloughing of the tissues at the point of the local reaction. In the infected, the local reaction may be accompanied by a more marked manifestation of the present symptoms. Those who are hypersensitive may show a severe systematic reaction

along with this local reaction. Those who have not been sensitized to the *Brucella* organism and who are probably susceptible to the infection show no local or systematic reaction. Often one sees in some individuals an erythema of one-half to two inches in diameter with no edema at the site of injection; this has the appearance of a non-specific reaction.

Proposed system for diagnosis of undulant fever, according to results of agglutination, skin test and opsono-cytophagic test:

Agglutination Test	Skin Test	Opsono-cytophagic Power of Blood	Status Toward <i>Brucella</i>
—	—	0-20 Bacteria per cell, Average — to +	Susceptible
— to +	+	0-40 Bacteria per cell, Average — to + +	Infected
— to +	+	40-100 Bacteria per cell, Average + + +	Immune

DIFFERENTIAL DIAGNOSIS

Many undulant fever cases are erroneously diagnosed typhoid and para-typhoid fever, malaria, focal infection, "rheumatism," influenza, prostatitis, appendicitis, septicemia, puerperal infection, and tularia. These are the most common, however undulant fever may simulate many other diseases. All suspected cases should have an agglutination test, skin test, and opsonic-cytophagic tests made. The State laboratories and several of the private laboratories in Oklahoma are running the undulant fever agglutination test on all negative Widal's. Some state laboratories are also running them on all blood sent in for Wassermann. Our State laboratories are discarding the aluminum plates for Widal's and are requesting the blood be sent in in Wassermann tubes. At least two cc. of blood should be collected. Running Widal's from a drop of dried blood on an aluminum plate or what-not, is very unreliable.

COMPLICATIONS

Complications that have been reported are arthritis, epididymitis, suppurative lesions, meningitis, salpingitis, empyema, puerulent cholecystitis. Abdominal organs may be affected, especially the female reproductive organs. Cases of abortion in women have been reported.

PROGNOSIS

The mortality rate is low, about two to four per cent resulting fatally. The disease, however, usually disables the patient for many weeks or even months. Some cases recover in two weeks with no relapse, but the disease is noted for its relapses.

TREATMENT

Angle reports seventy-two per cent cures with the vaccine therapy. He is using the same vaccine as used in the skin test, starting with 0.25 cc. given intramuscularly and increasing 0.25 cc. every two to three days until a severe systematic reaction has occurred, but never exceeding one cc. After a maximum of seven doses has been given, a period of two to three weeks should be permitted to elapse after which treatment may be continued if deemed necessary.

Elderly persons and heart conditions, especially bacterial endocarditis, should not be given the concentrated vaccines. A very dilute vaccine may be used.

CONCLUSION

According to reported cases undulant fever is on the increase in the United States. The actual cases are probably not on the increase as much as the statistics show because in the past it was often unrecognized.

Since our veterinarians show us that a large percentage of our cattle are infected, we believe there are numerous cases of undulant fever here in Oklahoma that have not been reported. All cases should be promptly reported to the State Health Department on the blue weekly report cards mailed to all physicians in the State.

We are making a study of the incidence of undulant fever cases here in Oklahoma, and expect to give you a report at some later date.

In all cases where the diagnosis is uncertain agglutination and skin tests should be made, keeping in mind that all persons who have been or are now infected with the *Brucella* organism will give a positive skin test. We suggest that an agglutination test be carried out on all negative Widal's and malaria smears.

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A CHOICE OF ANESTHESIA*

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As the title of this paper suggests, there is really and truly a choice to be had in this day of advanced medical science, when an anesthetic is selected for a proposed surgical operation. Anesthesia has kept pace with the other medical specialties in their rapid evolution and development of more scientific methods, drugs and technique. Indeed it is a fact, that in very few branches of medicine has there been the remarkable improvement that has taken place within the specialty of anesthesia during the last two decades. The patient no more is compelled to take chloroform or ether without any alternative and the anesthetist has ceased to be limited to one or two anesthetic agents. Today we have many and varied substances from which to choose and our needs are more and more being satisfied in having a suitable anesthetic for most occasions.

In discussing this subject I shall speak from the trained anesthetist's point of view and with proper consideration for the surgeon and the medical man. I shall keep the patient's welfare in mind and at the same time make allowance for the surgeon's preference of certain types of anesthesia. I shall speak of the general practitioner's duty to his patient in preparing him for an anesthetic. I shall stress the fact that too often the family physician, the surgeon and the anesthetist choose an anesthetic to their own liking rather than one suited to the patient and the type of operation anticipated. And I want to emphasize, too, the truth that a patient does not always know the kind of anesthetic best suited for him and therefore should not always be allowed to dictate.

My experience has taught me that in dealing with children under six and eight years of age, nitrous-oxide induction with the addition of varying amounts of ether is the anesthetic of choice. In very small infants it is often desirable to give open drop ether. The reasons for ether with children are many. In the first place it is impossible to premedicate them as one does an older child or adult. The high metabolic rate together with the rapid respiration make smooth relaxing gas anesthesia almost impossible. The fact that we do not like to give small children narcotics post-operatively is another reason why ether is desirable. The acute pain following surgery when a child awakens suddenly at the termination of an operation is quite considerable. If some ether has been added with or without nitrous-oxide or ethylene the child will sleep long enough to be over the immediate shock and pain. There are exceptions to all rules and that applies here. Rib resections and the like, following immediately after some acute pulmonary process are best done under local novocaine or with light and short gas anesthesia. Paracentesis of an ear drum or the reduction of fractures of small bones are best done under gas alone, because these are not followed by pain but on the contrary by relief.

In older children up to the ages of fourteen or fifteen where pre- and post-operative narcotics can be given in sufficient amounts to produce desired results, I believe nitrous-oxide and ethylene are the anesthetics of choice. The older the child and the nearer they approach the adult, the greater the incidence of pulmonary complications following ether anesthesia. There may be one exception here and that maintains with open mouth operations

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such as tonsillectomy. Ether given in such operations seems to be followed by less disagreeable after effects. Allow me to express myself here when I say I do not believe as some few maintain that chloroform is ever indicated in children, much less to be the anesthetic of choice for any surgical procedure.

As stated at the beginning, when it comes to abdominal surgery in the adult, we today have many agents and combinations of agents which are highly satisfactory. They all have their indications and their contraindications and have their field of selectivity. Here we must remember that in speaking of a choice of anesthetic we must necessarily refer to our own individual opinion on the matter and not the combined consensus of many men. We should keep in mind that each surgeon has his own personal likes and dislikes for different anesthetic agents—that medical men and others lean strongly toward some and very much abhor others. That is only human.

Acute surgical abdomens are practically always operated most successfully under spinal anesthesia. Novocaine is the agent of choice although spinocaine, nupercaine and the like are satisfactory in experienced hands. The reasons for the uniform use of spinal in abdominal surgical emergencies are most all obvious. Acute infectious processes are always accompanied by varying degrees of muscular rigidity and therefore difficult to relax. A ruptured gastric or duodenal ulcer is characterized by a board-like rigidity of the abdominal muscles which are almost impossible to relax sufficiently under any other type of anesthetic. Lack of usual pre-operative preparation tends to make the intestinal tract troublesome by being ballooned-up with gas. The tonic contracted state of the gut tract produced by spinal is next in importance only to the muscular relaxation produced. Patients who come to surgery with an acute surgical abdomen often times have food retained in the stomach and vomiting is not infrequently disastrous under inhalation anesthesia. Temperatures above normal and an excited patient are other conditions which make safe general narcosis difficult. When extreme shock with low blood pressure is present, spinal anesthesia

should be employed with utmost care. In patients with extensive intra-abdominal hemorrhage and an accompanying low systolic pressure the same holds true. In such instances it is often wise to use a light gas anesthesia with novocaine injected at the site of operation to produce muscular relaxation. Intravenous therapy of saline or glucose solutions just before or during operation may change the risk from a very poor one to a moderately good one.

Abdominal surgery performed on those with chronic or sub-acute pathology present a somewhat different problem for anesthesia. These patients can be well prepared for their anesthetic and hence it is not so imperative that one technique be adhered to. Adequate pre-operative drug therapy can here be employed and the gut tract put in ideal condition. There can be some elasticity employed in selecting the anesthetic and the surgeon's personal preference can be considered. The mental attitude of the patient and the condition of his nervous system here can be properly evaluated. These things are all important in making a selection. Roughly speaking laparotomies can be divided into lower and upper.

I feel very partial toward spinal anesthesia again in surgery involving the pelvis or lower abdomen. Proper exposure is very essential here and the two things which permit this are muscular relaxation and a quiet contracted intestine. Spinal has no competition in producing the ideal conditions for easy, neat surgery in the pelvis. The intestine is handled very little and the post-operative course is certain to be smoother. If the patient seriously objects or if the operation is expected to take an unusually long time, avertin supplemented by gas is highly satisfactory. Avertin gives considerably added relaxation over straight gas and its post-operative effects are quite pleasant. Lack of nausea and early pain are its chief attributes here. But avertin does not contract the gut and its relaxing effect is quite variable. I feel that ether anesthesia for most any abdominal surgery has many bad features and certainly no redeeming ones except that most anyone can administer it with a reasonable degree of safety.

Upper abdominal surgery involving operations on the stomach and gall bladder

require a different technique from pelvic surgery. In many instances spinal anesthesia is satisfactory but there are several features which often present themselves and are disagreeable. Retching and straining are most common among these. Actual vomiting often occurs when pressure is made in the epigastrium. These things cause delays and imperfect exposure. Here is a perfect place for avertin, supplemented by ethylene. Very little gas is needed, the patient is kept nice and pink and the relaxation is usually highly satisfactory. The long sleep following avertin is the one factor which reduces the post-operative vomiting in these cases to a minimum and that alone is worth while. Avertin is contra-indicated in cases with serious liver damage or impairment of function. In poor surgical risks for high abdominal surgery I can recommend nitrous-oxide-ethylene supplemented by one-half per cent novocaine infiltrated in the recti muscles and peritoneum. If you have never tried it I would say you have a pleasant surprise in store for you.

Operations on the breast, the chest wall or the pleural cavity are best done under nitrous-oxide or ethylene. Relaxation is not so important here and the advantages of gas over ether are too numerous to mention. Intra-thoracic surgery should be done with gas under positive pressure to prevent the accident of pulmonary collapse. There is one exception here as in children, namely, that rib resections for recent infectious processes should be done under novocaine field block. Nervous and apprehensive patients who fear general anesthesia can be given small doses of avertin previous to coming to surgery.

Surgery about the mouth and face where the application of a mask is awkward can be well done under avertin. Such operations as resection of the tongue, extensive lacerations of the face and plastic repairs are included in this group. Brain surgery can be done best under local anesthesia and where cooperation cannot be obtained avertin is a valuable aid. I should like to sound a warning against the use of avertin where blood is liable to slowly run down the trachea and make a pulmonary complication possible.

Spinal anesthesia is surely the anesthetic of choice in transurethral resections and

operations upon the kidneys. Inhalation anesthesia is always more or less hazardous where the high frequency current is used. Those who have done nephrectomies and removed difficult stones under spinal with its extreme relaxation will tell you that they are loathe thereafter to work under any other type of anesthesia.

Short surgical procedures can nicely be done under sodium evipal. This anesthetic, administered intravenously, offers quick loss of consciousness, a short deep sleep, considerable relaxation and a sudden uneventful return to consciousness without any complications or sequelae. It is especially advantageous in emergencies and when application of a mask to the face would hamper the operator. If you want to get enthusiastic about it just give about seven and a half grains to the patient suffering with a large peritonsillar abscess. In such cases an inhalation anesthesia is contra-indicated because of the frequent fatalities where serious impairment of the airway is present. It is highly recommended because of its ease of administration and its uniform good results.

To gather together the remaining few odds and ends of surgical procedures I should like to say that operations on the extremities are well done under nitrous-oxide or ethylene anesthesia. Caesarean operations are quite satisfactory under the same technique. Rectal work not requiring profound relaxation should be given one of the gases. Low spinal or even caudal is advantageous in overcoming a resistant muscle.

Everyone has read and heard patients discuss the subject of some of the more serious post-operative results of spinal anesthesia. I believe most of them are greatly exaggerated and some of them are out and out myths. This procedure, like another technique, requires some skill and precision to prevent getting into trouble. High spinal punctures are dangerous and reckless, promiscuous jabbing at the canal may produce paralysis, paraesthesias and the like. I believe, that considering the large number of subarachnoid blocks done everywhere and by every sort of anesthetist, you will agree this procedure has about as low a rate of complications following it as any other technique in use today. To

inject a patient and then walk away and leave them unsupervised is to be mentioned only to condemn it. Oxygen and carbon-dioxide inhalations are often helpful and occasionally intravenous therapy is necessary as elsewhere. Therefore it behooves the physician to disabuse the patient's mind that he does not have the same chance under spinal that he does under general narcosis.

I would not feel satisfied unless I said a word or two in closing directly referable to the general practitioner and surgeon. Lengthy and promiscuous discussion with a patient about their anesthetic usually brings about trouble and puts the patient "up in the air" so to speak. Often times the mere mention of the word "spinal" at some thoughtless moment will abuse the patient's mind about the procedure and ruin your chances of giving the patient the anesthetic of your choice or the one best suited for his operation. In these days when patients are prepared with barbituric acid derivatives and opiates before

coming to surgery they seldom are aware that the anesthetic has been given and regard the procedure as a part of the operating room technique. If they do not insist upon knowing what anesthetic you propose to use I see no good reason for getting them stirred up by explaining it to them. If they do ask it seems to me the sensible thing to do is to explain briefly and tactfully, leaving with them the thought that you are going to do the best thing for their welfare. Instead of putting the proposition before a patient in the form of a question if you will just state that you are going to give them such and such, they will frequently never offer any argument. To assure them that any procedure you decide upon will be done with skill and comparative ease is to sell them upon the anesthetic you have in mind. To force one kind or another upon them against their will is poor psychology and practice, to say the least. To be firm however in insisting that you know what is best is often the difference between putting it across and failing completely.

Physical and Spiritual Healing*

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"Luke, the beloved physician, and Demas, greet you."—*Colossians iv, 14.*

What a lot of interesting sidelights on human nature can be glimpsed from seemingly casual and unimportant verses in the Holy Scriptures! Closing his letter to the Colossians, as he closed nearly all his letters, with personal greetings, St. Paul here conveys the personal greetings of two of his friends who were also his companions while, living in his own house, but chained to a Roman soldier, he awaited his trial at Rome. Two friends—one of them a physician. But some time later—perhaps several months, possibly a year or two, or even longer—when he wrote his Second Letter to Timothy (the letter which is commonly regarded as St. Paul's swan song),

we read the pathetic words, "Demas hath forsaken me, having loved this present world, * * * Only Luke is with me." The one friend could not stand the gaff. He failed in time of trouble and adversity. But the other friend answered to the description in the Book of Proverbs: "There is a friend that sticketh closer than a brother." And he was "the beloved physician," the companion of St. Paul on his missionary journeys, his medical attendant when he was buffeted by his "thorn in the flesh," and the author of two of the most interesting and valuable Books in the whole of the New Testament Canon, the Third Gospel and the Book of the Acts of the Apostles.

Today the concurrence of the Feast of St. Luke the Evangelist with the Nineteenth Sunday after Trinity makes it appropriate that we should consider the re-

*Preached by the Rev. E. H. Eckel, Jr., in Trinity Church, Tulsa, Okla., St. Luke's Day (XIX Trinity), 1936. (Submitted by a member of the Tulsa Auxiliary requesting publication.—Editor.)

lation between Religion and Medicine, and between physical and spiritual healing. For St. Luke exemplifies in his own person the close association that should subsist between them. He was a physician and he was an evangelist, a proclaimer of the Christian message. [Whether he was technically in holy orders, whether (that is to say) he had been set apart by the laying on of hands for any office and function of the Christian ministry, such as the diaconate or the presbyterate, we cannot say—and it is a matter of small consequence.] But we do know that he was a physician, not only because St. Paul so informs us, but also because the minute study of his two Books reveals a background of medical knowledge that is absent from the other Gospels and New Testament writings. More than half a century ago a certain Dr. Hobart made an exhaustive study of "The Medical Language of St. Luke" and came to the conclusion that some four hundred words more or less characteristic of St. Luke were words that were also used (often very frequently) by Greek medical writers. Subsequent students of St. Luke's Gospel and the Acts have tended to discount Dr. Hobart's findings without, however, overthrowing his main contention. It is significant, for instance, that St. Luke gives us the fuller of the two accounts of the birth of Christ—which has led many to suppose that he was the confidant in later years of St. Mary. He alone relates what has been called the "surgical miracle" of the healing of Malchus' ear, which Peter rashly cut off with his sword when our Lord was arrested in the Garden of Gethsemane. He alone tells the story of the Good Samaritan, and how he bound up the wounds of the man who had fallen among the thieves, pouring in oil and wine, which were recognized household remedies for wounds. In his accounts of various miracles of healing he distinguishes between demoniacal possession and disease; he is precise in telling how long the person healed had been afflicted and sometimes how old the person was—just such details as a physician would be interested in. And it is interesting to note that he alone records our Lord's quotation of the proverb, "Physician, heal thyself."

Of course, medical science as it existed in the time of St. Luke, was still very

much in its infancy. But at least the medical profession then, as now, recognized the value of scientific observation and prognosis. And ever since the days of Hippocrates, "the father of medicine," some four centuries before our era, it sought to live up to the highest professional ideals. The so-called Hippocratic oath, incidentally, is still taken by doctors. But the greatest developments and advances in the field of medicine have taken place in the last hundred years,—yes, even in the lifetime of some who are here present.

In a delightful essay written thirteen years ago Dean Inge recalled some of the queer notions about health and disease that were prevalent in his boyhood back in the '60's and '70's. In those days, if you met a man wearing an overcoat in summer, with a woollen wrapper wound about his throat, and a respirator to prevent any pure air from entering his mouth, you could be sure that he was a consumptive—and it was commonly supposed that the disease was inherited. Nowadays fresh air treatment and an admirable and thorough-going campaign of public education have reduced the ravages of the White Plague to a minimum. Seventy years ago it was commonly supposed that the night air was poisonous, as the very name malaria suggests, and people slept with windows tight-closed. Not until 1897 did Sir Ronald Ross definitely establish that malaria was conveyed by the bite of the anopheles mosquito. Not until the turn of the century did Drs. Carroll, Reed, Lazear, Agramonte, and their associates trace yellow fever to a similar cause; and Dr. Gorgas, when he attempted to put their findings into practice in the Canal Zone, met at first with all sorts of official opposition and obstruction. Seventy years ago even the medical profession did not distinguish between typhus and typhoid, two totally different diseases. Children were taught that if they cut themselves between the thumb and first finger they would probably die of lockjaw. It did not occur to anyone that that is where one is apt to cut oneself with a dirty garden knife. In those days it was generally assumed that whatever the patient wanted to do was probably the worst thing for him to do and was suggested by "the disease." One hundred and fifty years ago it was supposed that even wash-

ing was dangerous, and the maxim for ablutions seems to have been, "Hands often, feet seldom, head never!" Children were encouraged to gorge themselves with food until comparatively recently, the idea being that to eat plenty of beef would make one as strong as the oxen whose flesh was devoured. A century ago gout ravaged the aristocracy, and as Dr. Inge says: "The victims were rather proud of it, so long as it was understood that it was 'rich man's gout,' which comes from drinking too much, and not 'poor man's gout,' which comes from eating too little." Bleeding was still a sovereign remedy up to the memory of some here present. The red and white stripes of the barber pole, representing blood and bandages, recall the fact that the barber until comparatively recent times practiced bleeding—and some of them still do . . . by accident. When a certain eighteenth century aristocrat fell against a marble table and cut his head open, a surgeon rushed upon him and bled him at once, though Nature was already doing so very profusely!

In short, the advance in medical science and in the popular knowledge of hygiene in the last five or six decades is almost unbelievable and gives substance to the hope that cures may yet be found even for such dread diseases as cancer. The annals of modern medicine, with the revolutionary contributions of such men as Harvey, Lister, Jenner, Pasteur, Trudeau, the conquerors of malaria and yellow fever, right down to the Mayo brothers today constitute one of the most thrilling romances of modern times. God be praised for the unselfish and self-sacrificing labors of the doctors in the cure of disease and the alleviation of suffering. Their knowledge is God-given. Their devotion to humanity is Christ-like. It is the height of folly on our part to fail to avail ourselves of the physicians' skill and wisdom, which come from God. For, as most physicians gladly recognize, they simply set free and co-operate with the "healing power of Nature," which is but another name for the healing power of God.

There is no basis, then, for the notion that religion and medicine are in any way opposed to one another. To be sure, there are some doctors who are materialists and skeptics, so concerned with physical symp-

toms and physical treatment that they fail to allow for psychological and spiritual factors and for the inter-action of body, mind, and spirit. And on the other hand, there are some religionists who so over-emphasize the function of faith that they ignore the physical facts. Bacteria and infection, for instance, are physical facts which it is not faith but folly to overlook. Religion and medicine should go hand in hand, as they did in the person of "Luke, the beloved physician," and as they have in many a Christian physician since. I am thinking especially of such men as Sir Wilfrid Grenfell, the beloved physician and evangelist of Labrador, and the late Rudolph Teusler, whose monument is St. Luke's International Hospital and Medical Center in Tokyo, the greatest hospital in the Orient and a standing witness to the healing ministry of Christ. And I am thinking also of that gifted Alsatian, Albert Schweitzer, one of the most versatile men of our generation, a philosopher, theologian, artist, and musician of the first rank, who took up the study of medicine in mature life, gave up his pastorate, and went as a medical missionary to the Congo jungle in order that he might redress some of the injustice which the white man had inflicted upon the black man. To quote his own words, "I wanted to be a doctor that I might be able to work without having to talk. * * * This new form of activity I could not represent to myself as being talking about the religion of love, but only as an actual putting it into practice." [I have heard some people express surprise that our former curate, Judson Leeman, should have undertaken a course of study to fit himself as a medical missionary to the Orient. I don't know why. There is ample precedent in the annals of the Christian religion for the combination of priest and physician.]

And if religion and medicine are not in any way opposed, neither is spiritual healing in any way inconsistent with physical healing. The aim of physical healing is wholeness, and the aim of spiritual healing is holiness—and there is more than an etymological connection between the two. St. John wrote to his well-beloved Gaius, "Beloved, I wish above all things that thou mayest prosper and be in health, even as thy soul prospereth." And St. Paul wrote

to the Thessalonians: "I pray God your whole spirit and soul and body be preserved blameless unto the coming of our Lord Jesus Christ."

Strictly speaking, I suppose we ought to recognize that there are three planes on which the healing process may be carried out—the physical, the mental, and the spiritual. "Medicine has to do with the body, psychotherapy with the soul, and spiritual healing with the spirit." And ideally these three should always work together. An experienced priest of our communion has put it very well in these words: "As a plain matter of fact medicine as medicine may heal the body, or rather may clear away obstacles and so enable the body to heal itself. Psychotherapy as psychotherapy may untangle the processes of men's minds and bring order out of mental confusion, but neither medicine nor psychotherapy can heal men's spirits nor restore harmony among the various parts of their natures. Let medicine and psychotherapy do what they can and will, room will still be left for spiritual healing, *i. e.*, for the healing of men's spirits and for the adjusting of their minds and bodies to their spirits."

There is ample evidence that the truth of this is coming to be recognized more and more generally by members of the medical profession. The recent book of Dr. Alexis Carrel, "Man Unknown," is a case in point. Physicians today are far more ready than they were a generation or two ago to recognize in the clergy their natural allies in ministering to the sick. They are far more ready than formerly to recognize that the clergy bring what they cannot bring, the assurance of Divine love and care and forgiveness. As a devout Roman Catholic physician once said to me, "We do the best we can; but when we have done our best, we have to recognize that Someone else is running the show."

And the clergy on their part are learning new techniques in their approach to the sick. There was, after all, some justification for the old-fashioned prejudice which many doctors had about admitting the clergy to the sick-room. The old idea that sickness is a Divine visitation, which used to be so prominent in the Prayer Book before its last revision, is now obsolete. So also, I hope, are long faces and gloomy

looks in the presence of the invalid. The priest has learned to make his every gesture and tone of voice breathe faith and hope and courage.

I believe in prayers and intercessions for the sick. I believe in prayer with the laying on of hands, the prayer being adapted to the physical and spiritual condition and needs of the sick man. I believe in the apostolic rite of unction or anointing with oil, not as a preparation for death, but as the outward and visible sign of spiritual healing. Above all, I believe in the communion of the sick, because I know that in this sacrament we may not only have fellowship with the sufferings of Christ, but also lay hold on Him by faith and experience His forgiveness and healing power. I have seen too much evidence of His healing power and saving grace ever to doubt the reality of spiritual healing.

Yet I know, too, how easy it is to fall into a superstitious view and magical notions of such healing, as if God must grant us our heart's desire when and as and how we wish it. After all, it is the fulfilment of *His* will and not ours that we seek, and His will extends beyond the vicissitudes of this life into the life of the world to come. We shall be content to leave the issues in His hand. We shall be content with what measure of bodily health He sees fit to grant. We shall not lose faith because bodily healing does not always result from spiritual healing. When the late Mr. James Moore Hickson, the famous spiritual healer of the English Church, was in New York City some years ago, he was asked to visit and minister to a blind man. Some time afterward the man's daughter was asked how her father was, and replied: "He is still blind, but now he does not mind it." That was not a case where spiritual healing had failed. The true victory of faith is to be taken over and possessed by Christ, and to be moulded and used as the instrument of His will. For after all, bodily healing was not the most important feature of the ministry of our Lord. And bodily health is not the highest end of man. The highest end of man is to know God through Christ, and to love and serve and enjoy Him for ever and ever.

(For some of the teaching in the latter part of the sermon, the preacher acknowledges his indebtedness to a little pamphlet by the Rev. J. Wilson Sutton, D.D., Vicar of Trinity Chapel, New York, entitled "Spiritual Healing.")

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council.

VOL. XXX FEBRUARY, 1937 Number 2

DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

THE COUNCIL

A called meeting of the Council was held at the Aldridge Hotel, Shawnee, January 22nd, and although the weather was very unfavorable, permitting only a few members of the Council to be present, some very important business was transacted.

By action of the Council the time for payment of dues, before becoming delinquent, was extended to March 15th.

There was very liberal discussion of the proposal to place the United States Public Health Service under a new bureau to be known as a Department of Public Welfare. Feeling that this would not be of advantage a resolution (which you will find

following this editorial), was adopted and the suggestions relative to its distribution have been carried out.

The Council also discussed the subject of Post Graduate Medical Teaching and an arrangement by virtue of which we might be able to interest the Commonwealth Fund in assisting us in carrying out a very extensive post graduate course in obstetrics was discussed. Early in January Dr. Henry H. Turner, Chairman of the Committee on Post Graduate Medical Teaching had a meeting of his Committee, in Oklahoma City, and the details of the proposed course were presented and discussed and they (the Committee) are now at work on very definite plans, hoping to receive assistance from this Fund. The plans will be definitely made and presented to the Board of this Commonwealth Fund in the spring and if they are accepted this very excellent course will be instituted and will be entirely under direction of the State Medical Association.

Members of the Committee on Public Policy and Legislation were present at this Council meeting and presented in detail their activities. They were given the unanimous support of the Council and are certainly to be commended for the excellent work they are doing and the amount of time they are sacrificing from their personal business to look after this important phase of the work of the Association. This Committee again requests that the individual doctors throughout the state show their interest by keeping in touch with their legislators from their respective counties and help in this way to put over this most important program.

It is evident that more work of a constructive nature is being done by the Committees of the State Medical Association at this time than ever before and their accomplishments will only be limited by the amount of cooperation received from the individual member.

The resolution concerning the Public Health Service follows:

"WHEREAS, information has reached the officers of the Oklahoma State Medical Association to the effect that influences at Washington are at work to divorce the United States Public Health Service from the Treasury Department and make it a bureau in a proposed Department of Pub-

lic welfare of the National Government, and

WHEREAS, such a change in the administration of public health service on the part of the National Government would tend to cause the several states to convert their health departments into bureaus of the Departments of Public Welfare, and

WHEREAS, public health service, being preventive in character, conflicts so radically with public welfare service which is curative in character, that a single administrative head would not be able to develop the most advantageous policies and programs in the separate fields of activities, and

WHEREAS, the highly scientific and technical nature of preventive medicine make imperative to the best interests of the people a public health service administered by a competently trained physician, experienced in executive administration, and

WHEREAS, the United States Public Health Service as a bureau of the Treasury Department, which exercises only budgetary supervision over its activities, has functioned in a universally satisfactory and efficient manner, and therefore be it

RESOLVED, that the Council of the Oklahoma State Medical Association in special session assembled, vigorously opposes the proposal of making the United States Public Health Service a bureau in the National Government other than in the Treasury Department, and be it further

RESOLVED, that the Association strongly recommends in the event of any reorganizing process affecting the United States Public Health Service, the creation of a Department of Public Health in the National Government to include all activities in the field of preventive medicine now performed by the various departments, and be it further

RESOLVED, that copies of this resolution be transmitted to the President of the United States, to each Senator and Representative in Congress, from Oklahoma, to the Surgeon General of the United States Public Health Service, to the Oklahoma State Health Commissioner and published in THE JOURNAL of the Oklahoma State Medical Association."

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 30.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	170.00
Caddo	240.00	90.00
Canadian	230.00	75.00
Carter	260.00	130.00
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	190.00
Custer	230.00	210.00
Garfield	420.00	250.00
Garvin	150.00	150.00
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	140.00
Jackson	160.00	120.00
Jefferson	110.00	
Johnston	10.00	
Kay	320.00	290.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	50.00
Logan	200.00	100.00
Major	30.00	
Marshall	50.00	
Mayes	110.00	10.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	60.00
Murray	110.00	
Muskogee	520.00	60.00
Noble	40.00	
Nowata	50.00	50.00
Okfuskee	150.00	100.00
Oklahoma	2740.00	1065.00
Okmulgee	280.00	210.00
Osage	220.00	220.00
Ottawa	310.00	90.00
Pawnee	100.00	90.00
Payne	250.00	160.00
Pittsburg	350.00	200.00
Pontotoc	300.00	300.00
Pottawatomie	330.00	160.00
Pushmataha	75.00	40.00
Rogers	120.00	60.00
Seminole	320.00	110.00
Sequoyah	10.00	10.00
Stephens	220.00	60.00
Texas	50.00	20.00
Tillman	100.00	110.00
Tulsa	1980.00	1200.00
Wagoner	40.00	40.00
Washington	250.00	240.00
Washita	120.00	
Woods	190.00	140.00
Woodward	260.00	150.00

NOTE—Corrections and additions to the above list will be appreciated.

Editorial Notes—Personal and General

DR. A. L. DAVENPORT, Holdenville, has been appointed Health Superintendent of Hughes County, to succeed Dr. C. S. Wallace, Holdenville, effective December 1st, 1936.

DOCTORS LINDSEY, JOHNSON and SHIRLEY, Pauls Valley, are constructing a new hospital.

DR. W. P. LONGMIRE, Sapulpa, has been removed to his home from the Morningside Hospital, Tulsa, where he underwent an operation for appendicitis. He is making a satisfactory recovery.

DR. CHARLES D. DAVIS, Oklahoma City, has retired from the Lain-Eastland Clinic with which he has been connected for many years.

DR. BASIL A. HAYES announces the opening of his Clinic of Urology at 625 N. W. Tenth Street, Oklahoma City.

Dr. W. F. HAYS, Claremore, is reported suffering from a fractured hip.

DR. GEORGE KIMBALL, Oklahoma City, announces the opening of offices at 404 Medical Arts Building.

DRS. L. R. PACE and CLAUDE S. CHAMBERS, Seminole, are opening a clinic to be known as the Pace-Chambers Clinic.

DR. RALPH BOWEN, Oklahoma City, addressed a meeting at Nacogdoches, Texas, January 13th. His subject was on "The Practical Management of Allergic Problems as Seen in General Practice." On January 27th he spoke on the "Asthmatic Child," at a meeting in Parsons, Kansas.

DR. CHAS. M. PEARCE, State Health Commissioner, has returned from Memphis, Tenn., where he was summoned for a conference with Dr. W. K. Sharpe, assistant surgeon general for the United States Public Health Service. The conference was to consider venereal disease control.

DR. S. H. WILLIAMSON, Duncan, announces his removal to Bethany, Oklahoma, where he will continue his practice of medicine.

DR. G. S. BARGER, Purcell, has moved to El Paso, Texas, where he will do army medical service in the Fort Bliss area.

DR. M. S. GREGORY, Oklahoma City, is reported very ill from a kidney and heart condition. He is now confined to the Veterans Hospital, Waco, Texas, where his condition is reported very grave.

SECTIONAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

Information has just been received from Dr. Malcom T. MacEachern, associate director of the American College of Surgeons, Chicago, Ill., that the next sectional meeting of the American College of Surgeons will be held in Denver, Colorado, on April 7, 8 and 9 next. The states of Colorado, Utah, Wyoming, Nebraska, Kansas, Oklahoma, New Mexico, Arizona and Western Texas will participate in the meeting.

Dr. MacEachern assures us that there will be an interesting meeting which is now being arranged by an excellent committee on local arrange-

ments under the chairmanship of Dr. Casper F. Hegner.

It is hoped that as many Fellows of the College in the state as can will make an effort to attend this meeting which I am sure they will find interesting and beneficial.

Pat Fite, M.D., Secretary,
Oklahoma State Executive Committee.

RESOLUTIONS

DOCTOR H. C. LLOYD

WHEREAS, our fellow member and friend, Dr. H. C. Lloyd, of Hobart, Oklahoma, who was a member of our Society, was called from us on November 16, 1936, and;

WHEREAS, Dr. Lloyd for many years has been a member of this Society and rendered through it most valuable service to his profession in the county, and has been recognized by the doctors of this county and state as one of the most beloved members of the medical profession;

THEREFORE BE IT RESOLVED, that we receive this information with deep sorrow and regret, realizing our loss in both counsel and advice, and

BE IT RESOLVED, that we extend to the family our deepest sympathy and assure them of our sincere desire to share with them this burden of loss, and

BE IT FURTHER RESOLVED, that a copy of this resolution be made a part of the minutes of this meeting, that it be published in the Journal of the Oklahoma State Medical Association, and that a copy be sent to the family and to the press of this city.

Signed: W. P. Brown, M.D.

OBITUARIES

DOCTOR H. C. JOHNSON

Dr. H. C. Johnson was born in Lovettsville, Va., on December 12, 1869, where he grew to young manhood. After completing the common high school and college courses, he took the study of medicine, attending the Maryland Medical College in Baltimore. He was president of his class. After finishing he moved to Antlers, Oklahoma, in 1904.

He was held in high esteem by all who knew him, and he held a large practice at Antlers.

He has served as president of the Pushmataha County Medical Society and at the time of his death was a member of the Board of Censors for this county.

His funeral was held at the First Presbyterian Church. The Masons of Antlers conducted the Masonic ritual at the grave.

RECENT DEATHS

(Insufficient data available for obituary.)

Dr. D. Armstrong, Durant, January 28, 1937.

Dr. William Kenneth Hudson, Hartshorne, November 29, 1936.

Dr. Charles S. Neer, Vinita, January 22, 1937.

Dr. A. W. Nunnery, Chickasha, January 10, 1937.

Dr. DeWitt Stone, Sayre, January 16, 1937.

News of the County Medical Societies

DR. C. B. SULLIVAN, Cordell, was elected president of the Western Oklahoma Association at their quarterly meeting held in January at Clinton. Dr. H. K. Speed, Jr., Sayre, was elected vice-president; Dr. C. Doler, Clinton, secretary-treasurer.

Their program consisted of addresses by Drs. R. M. Howard and Philip M. McNeill, Oklahoma City, on "Goiters" and "Pneumonia," respectively. A program committee was selected for this group with Dr. Lealon Lamb, Clinton, as chairman. The next meeting will be March 9th.

OKLAHOMA County Medical Society, at their meeting in December, 1936, elected the following officers and board of directors for the current year: President, Dr. Philip M. McNeill; vice-president, Dr. C. J. Fishman; secretary-treasurer, Dr. Henry H. Turner; board of directors, Doctors P. M. McNeill, C. J. Fishman, Henry H. Turner, Rex Bolend, H. Dale Collins, Carroll M. Pounders, J. C. MacDonald, Wann Langston, L. J. Starry.

PAWNEE County Medical Society reports a meeting at the Pawnee-Ponca Hospital in Pawnee, January 14th, at which time Dr. James Stevenson, dermatologist of Tulsa, gave an interesting and instructive talk on "Diseases of the Skin" and stressing the use of radium and x-ray on certain stubborn diseases.

The following officers were elected to serve Pawnee County for 1937: President, Dr. J. L. LeHew, Pawnee; vice-president, Dr. H. B. Spaulding, Ralston; secretary, Dr. L. P. Hetherington, Pawnee; censors, Drs. M. L. Saddoris, Cleveland; J. L. LeHew and E. W. LeHew, both of Pawnee.

News Notes of Woman's Auxiliary

Cleveland County

This month our one accomplishment is: We have made arrangements with radio station WNAD, the university of Oklahoma, Norman, to broadcast a health talk by Dr. Guy H. Williams, County Health Officer of Cleveland county. The talk will be given on January 13th from 2:45 to 3:00 p. m. and will be arranged in such a way as to be of interest to senior high school students as we are informed that at that time there are three hundred listeners' groups established over the state for the afternoon broadcast.

We have been offered time February 2nd for another broadcast and we are asking for the cooperation of the Cleveland County Medical Society so that there will be no misinformation sent out over the air and no medical ethics imperiled.

Our members are doing considerable welfare work and health educational work through other societies to which they belong.

Oklahoma County

Report for October, November and December: The Woman's Auxiliary to the Oklahoma County Medical Society opened their year with a registration tea October 2, 1936, at which time old members registered for the coming year and many new members were welcomed. The actual work of the Auxiliary began with a meeting October 21, where plans were made for the entertainment of wives of the visiting doctors at the annual meeting of the Oklahoma City Clinical Society. Sewing and scrap books for the Crippled Children's Hospital occupied the morning hours until luncheon was served.

During the meeting of the Clinical Society our

auxiliary members were hostesses to two parties, one of which took the form of a trip to parts of interest in Norman, our university city, and ending with a tea at the spinning wheel. The Auxiliary members at Norman were joint hostesses at this affair and very capably managed the tour of Norman and the tea. On Wednesday night Dr. and Mrs. J. B. Eskridge opened their lovely new home to our visitors where we entertained with an amateur hour, a take-off on Major Bowes.

On November 25 we met again to sew for the hospital and were quite proud of the fact that at the end of that meeting we had completed fifty-three garments besides our scrap books for the two months. In addition we provided three large families with food not only for their Thanksgiving dinner but with enough for the four days that the children were home from school and therefore not receiving hot lunches.

We have no meeting in December and do not meet again until January 27. However, we feel that we have accomplished a great deal with the two meetings we have had and are looking forward to considerable accomplishments during January, February, March and April.

Pittsburg County

Organized in April, 1936, the twenty members of the Woman's Auxiliary of Pittsburg County Medical Society have been represented at both state and national medical meetings and have assumed responsibility in several local health projects.

Raising funds through benefit bridge parties and by placing jars in local drug stores for contributions, the unit has assisted by providing fruit and nursing for several contagious cases and by placing a special "cod liver oil" fund at the disposal of the county judge for use in crippled children's cases where this treatment was prescribed.

This month the unit is launching its biggest project, the sponsorship of a civic-wide movement with its goal the purchase of an "iron lung" for the use in emergencies in this section.

The unit has placed "Hygeia" in all of the high schools of the county and in McAlester public library.

The auxiliary holds regular monthly meetings on the first Tuesday, having them customarily in a social manner.

Tulsa County

Report of activities of Auxiliary to Tulsa County Medical Society from October, 1936, to January 1, 1937:

October 6, membership tea. Paid membership of one hundred and forty-three, which was an increase of fifty-four since last year. Sixty present at this meeting. Children's hour at Morningside Hospital continued every Wednesday. Twenty-five books added to library at St. John's Hospital for nurses and patients.

November meeting, luncheon. Fifty-five members present. Mrs. H. D. Ruprecht, member of Auxiliary and also physician, gave talk on "Public Education in Social Diseases." Ten new members present. Contest held to help members become better acquainted.

December meeting, luncheon. Forty present. Rummage sale held—proceeds \$43.50 to be spent for philanthropic work. Thirty-six dollars given to milk fund for undernourished babies. Forty-eight garments made and given to Public Health Association. Thirty-six bibs made and given to Nursing Home. Fifteen subscriptions to "Hygeia"—six to be given to local schools. Plans made for Health Poster contest, for which prizes will be awarded in local schools.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
717 North Robinson Street, Oklahoma City

Interesting reprints which have come to my desk recently:

"Relief of Pain by Peripheral Nerve Block in Arterial Diseases of the Lower Extremities," Beverly C. Smith, M.D., New York. *Annals of Surgery*, November, 1936.

"An Investigation into Wiring of the Spinous Processes as a Means of Internal Spinal Fixation," Arthur D. Kurtz, M.D., and Morris T. Horwitz, M.D., Philadelphia. *Archives of Surgery*, October, 1936.

"Transportation of the Injured, with Particular Reference to Fractures of the Extremities," Robert H. Kennedy, M.D., New York. Published by American College of Surgeons.

"Acute Osteomyelitis: Etiology, Symptoms, Diagnosis and Treatment of Eighty Cases," Joseph I. Mitchell, M.D., Memphis, Tenn. *Southern Medical Journal*, June, 1936.

"Bone Syphilis," J. S. Speed, M.D., and H. B. Boyd, M.D., Memphis, Tenn. *The Southern Medical Journal*, April, 1936.

"Operative Reconstruction of Malunited Fractures About the Ankle Joint," J. S. Speed, M.D., and H. B. Boyd, M.D., Memphis, Tenn. *Journal of Bone and Joint Surgery*, April, 1936.

"Bone Tumors," Willis C. Campbell, M.D., Memphis, Tenn. *Surgery, Gynecology and Obstetrics*, January, 1936.

"Repair of the Ligaments of the Knee: Report of a New Operation for Repair of the Anterior Crucial Ligament," Willis C. Campbell, M.D., Memphis, Tenn. *Surgery, Gynecology and Obstetrics*, June, 1936.

Biological Basis of Surgery, Particularly Orthopedic Surgery. George W. Hawley. *American Journal Surgery*, XXXI, 438, March, 1936.

This article, written on a subject little understood and by a surgeon of great experience, should be read in detail by every surgeon desiring a deeper insight into the relation of anatomy, physiology, and pathology to form, function, and tissue changes incident to disease and trauma.

"When surgical problems are approached from the basis of anatomy function or abnormal form and function, only one side of a polygonal problem is seen. Anatomy represents an existing standard of form, without appreciation of the processes producing it and those ceaselessly at work to effect change of form.

"The same applies to physiology and pathology; representing existing phenomena of normal and pathological functions.

"The combination of anatomy, physiology, path-

ology, including their offspring, physiological chemistry, bacteriology and their many first and second cousins; the careful weighing, assaying and grouping of all these is not enough to complete the picture. Their composite grouping and fusion does not make human biology, biological factors, processes and laws as applied to the human organism.

"Biology is defined as, 'the science of life or living organisms,' but to make the definition inclusive would be to paint a picture of all living things, both vegetable and animal. For convenience biology may be divided into three divisions, plant, mammalian and human. Human biology might be defined as a combination of all those factors, processes and potential forces which are continuously working in the human organisms to regulate and determine both function and form in normal and abnormal states, from intra-uterine birth through the period of growth, adult activity and decline.

"When an approach is made to a surgical problem the operator should have in mind the biological factors as well as the anatomical, the physiological and the pathological. In order to pattern surgical relief in accordance with the biological laws of purpose and design, he should make the following inquiries: (1) the biological processes which are at work, (2) what structures are involuting and which evolving, (3) which are potentially weak and more frequently damaged and which are strong, (4) what attack is best suited to one in contrast to the other, (5) what is the relationship of form to function and the process which produced the form, (6) what are the processes of defense and repair, (7) what is the particular relationship of deformity to disability, (8) what are the processes affecting adjustment of function to deformity. Methods of surgical relief have been automatically guided and controlled to accord with biological laws, but not always do methods fit these days. Success and failure have helped to show the way, for the history has been groping and stumbling in the dark to find the way. The man who first opened an abscess made a great discovery, but he was unaware of the full meaning. He discovered a biological process the importance of which did not become apparent until Lister exposed it to the light."

Treatment of Sprains by Interligamentary Injection of Novocaine. Rene Leriche and G. Arnulf. *American Journal Surgery*, XXXII, 45, April, 1936.

The authors advocate local injections of novocaine into the ligaments of joints which are the seats of injuries or post-operative strains. They believe that a sprain is the reflex consequence of trauma, and specifically is the result of a distortion of the nervous apparatus present in the articular ligaments. The technique is injection of ten to twenty cubic centimeters, according to the importance of the articulation, of a one per cent solution of novocaine into the region of the traumatized ligament at the spot of maximum tenderness. Care should be taken to inject the ligament itself. In the

case of the hip, a long, flexible needle is carried to the femoral neck and withdrawn about one centimeter, and the injection is then made. In this manner more rapid and complete restoration of function can be obtained. Best results are obtained in cases of simple sprain with articular impotency and the after-effects of sprain, such as pain and muscular atrophy, and in cases of operative sprain of ligaments following orthopaedic operations or manipulations.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

"Alcohol" Amblyopia, Pellagra, Polyneuritis. Report of Ten Cases. Frank D. Carroll, M.D., New York. Archives of Ophthalmology, December, 1936.

A review of ten cases and a brief resume tends to prove that alcoholic polyneuritis and the alcoholic type of pellagra are caused by deficiency in diet.

In 1928 and 1929 Shattuck and Minot, respectively, thought avitaminosis to be of significance in alcoholic polyneuritis. In 1930 and 1933 Wechsler reported cases of polyneuritis which showed great improvement when given the proper diet. Spies and De Wolf permitted ten patients with the alcoholic type of pellagra to take in connection with a well balanced diet and autoclaved yeast, whiskey each day. All ten recovered. A like procedure was carried out by Straus, with the addition of vitamin B concentrates and liver extract to the proper diet. Recovery as complete as the group that was given no alcohol was noted.

Joliffe, Colbert and Joffe by Cowgill's calculation of the vitamin B requirement of man, found that out of forty-two alcoholics, the twenty-six who had polyneuritis had an insufficient intake of vitamin B with the reverse being true of the remaining sixteen. Wechsler, Jervis and Potts experimented with monkeys and cats and noted a marked change in the nervous system of the animals kept intoxicated and fed a diet deficient in vitamin B.

Case 1. A white man, age 35, accustomed to drinking from one to three pints of whiskey daily and smoking a package of cigarettes a day, reported poor vision. He had had severe vomiting and diarrhea was present, later hallucinations developed. His diet was found to be very inadequate. His condition improved slowly after he was given an anti-pellagra diet, high in vitamin B and B2, and intramuscular injections of liver extract. Sixteen months after the onset his physical condition was excellent, his eyesight almost normal but he had a slight residual mental impairment.

Case 2. A thirty-two year old negro man who drank a pint of whiskey and smoked a few cigars daily, had three visual hallucinations. Vision in the right eye was 18/200 and in the left eye 10/200. Upon examination of the skin typical cutaneous lesions of pellagra were found. After the anti-pellagra treatment the dermatitis disappeared. Polyneuritis developed during treatment, which is not uncommon. A year later vision was 20/20 in both eyes.

Case 3. A negress, twenty-five years old, drank about a quart of whiskey and smoked a few cigarettes daily. Impaired vision and cutaneous lesions of pellagra on the hands, elbows and vulva, resulted from her very inadequate diet.

Case 4. Symptoms of a forty-four year old taxi driver, a heavy drinker and smoker, were diagnosed

as pellagra, polyneuritis and Korsakoff's psychosis. He also had impaired vision. The dermatitis cleared up in four weeks, the polyneuritis in eight weeks, and the vision in the right eye remained at 20/200 for six months.

Case 5. Living mostly on whiskey and cigarettes, this man, a janitor, showed mental impairment, edema of the legs and thighs, cutaneous lesions of pellagra and mild polyneuritis. The vision of the right eye was 20/200 and in the left eye 8/200. Treatment consisted of a "high vitamin diet, brewer's yeast, wheat germ and vegex by mouth as well as vitamin B, concentrate and liver extract given intramuscularly." He improved gradually. In three months his left eye, with corrections, was 20/80 and the right eye 20/40.

Case 6. The diagnosis of a thirty-one year old negro, who daily drank over a quart of gin and smoked a few cigarettes, was pellagra, polyneuritis and alcoholic encephalopathy. He gradually improved mentally and physically. His eyesight improved from 15/200 right and 20/40 left, to 20/20 right and 20/30 left.

Case 7. A thirty-five year old patient who drank a pint or two of whiskey and smoked a package of cigarettes every day, also had pellagra associated with alcoholism. He had the typical central field defects of alcohol amblyopia.

Case 8. A thirty-four year old woman had hallucinations caused by excessive drinking. She also smoked approximately a package of cigarettes a day. Alcoholic polyneuritis and Korsakoff's psychosis was the diagnosis. After four weeks the knee and ankle reflexes were still absent, a feeling of numbness in the extremities and some loss of memory regarding recent happenings persisted. Examination showed a centrocecal scotoma in both eyes which became smaller after two weeks.

Case 9. Chronic alcoholism, polyneuritis, nutritional edema and pellagra resulted from the daily consumption of one to four pints of corn whiskey by a middle aged white man. He smoked a package of cigarettes a day. He had had practically nothing else, except white bread and soup. His vision was also impaired.

Case 10. Having been a heavy drinker for fifteen years and smoking from one to two packages of cigarettes a day, this thirty year old white man was not alarmed about his amblyopia, because after each attack the blurred vision usually disappeared. The vision in each eye was 20/200 and with one week of anti-pellagra diet his vision had improved to 20/50 in the right eye and 20/100 in the left eye. He also had stomatitis, diarrhea, dermatitis and polyneuritis which generally accompanies pellagra.

In the preceding ten cases all of the patients had had inadequate diets.

Practical Points of Submucous Septum Resection: Pitfalls and Corrections. Dr. Alexander F. Laszlo, New York. The Laryngoscope, November, 1936.

Two thousand submucous resections done in the nose and throat department of the New York Post-Graduate Hospital are reviewed. An attempt is made to answer why a more universally good result is not obtained from this operation. He lists the operation as second in incidence to that of tonsillectomy.

Lack of success is credited to imperfect diagnosis, improper amount of obstruction removed, complications and post-operative neglect. Important consideration should be given to the individuality of the patient, to climatic conditions and especially

to the preparation of the patient for a submucous, which the author considers a major operation. The position of the patient, the anaesthetic used and the possible reactions in some cases, is given in detail. The instruments necessary, whether few or many, are those which the individual surgeon chooses. An injection of one per cent novocaine with adrenalin before the incision is made aids the anaesthesia. The nostrils should be sterilized and the incision made to follow the deviation of the septum. Separating the wrong cleavage, using too little adrenalin or tearing the mucous membrane will cause bleeding. A tear on one side does not cause serious trouble but if on both sides the result is a permanent perforation which is difficult to heal. In case of broken instruments that cannot be located an x-ray should be taken at once. All packings and any small pieces of bone or cartilage must be carefully cleaned out. Of paramount importance is not removing too much bone and cartilage, since this will prevent good results and may cause the bridge or the tip of the nose to drop.

After the operation a thorough check up for fragments or plugs should be made, the nose packed and the patient put to bed. The packing should not remain over twenty-four hours. Slight bleeding sometimes occurs shortly after the operation and may continue for a few hours, but it is usually stopped by ice compresses on the nose and placing the patient in a sitting position. In a few cases severe bleeding, sometimes starting from the sphenopalatine artery, necessitates not only tight packing, but injections and transfusions. After the twenty-four hour pack is removed bleeding may occur but will probably stop if the patient is quiet, with head bent forward. Secondary hemorrhages may occur any time within two weeks after the operation and if serious, examination of the blood should be made. To prevent the distress caused by hematomata, which occasionally occurs, an opening should be made in the original incision or in the floor of the nose. Septal abscesses should be surgically treated and a nasal irrigation used and free drainage assured.

Ear infection, acute throat infection, anosmia temporary or permanent and meningitis are some of the complications that may arise after a submucous septum resection. The patient should be given careful post-operative observance for a few weeks.

Submucous septum resection should not be done on children, unless nasal difficulties are of a serious nature and then only the least possible amount of work done. If a patient has an acute infection, there should be no operation.

The Staphylococcus in Relation to Sinusitis, Bronchitis and Bronchiectasis. Fletcher D. Woodward, M.D., University, Va., *Archives of Otolaryngology*, December, 1936.

Streptococci, pneumococci, influenza bacilli, fungi and spirochetal organisms have greatly overshadowed the staphylococcus, as a latent menace to the upper respiratory region, regardless of the large number of staphylococci reported.

Cultures taken from sixty-four patients suffering with a chronic low grade sinus infection, showed the presence of hemolytic staphylococci in seventy-five per cent of the cases and non-hemolytic staphylococci in seventy-two per cent.

These results should bring about more zealous inquiries of this organism. Ample evidence is available to apparently rank staphylococci only as hemolytic and non-hemolytic and points to the presence

of only one toxin. From results obtained by animal experimentation one now has at his disposal for clinical use both the toxoid and the antitoxin the same as in diphtheria and tetanus. Variability of the titer is discussed. The author agrees with Dolman regarding the recovery from staphylococcal infection relative to the concentration of antitoxic antibodies in the blood.

The injection of toxoid will cause the rise in titer, while the injection of staphylococcus vaccine will not accomplish this. If staphylococci are more prevalent in acute sinusitis than streptococci, more anxiety is felt, since the normal body resistance, as a rule, is not as high toward resisting the former as the latter.

Because of the many serious complications (i. e. orbital abscess, osteomyelitis, thrombosis of the cavernous sinus, meningitis, abscess of the brain and septicemia) that may follow acute staphylococcus sinusitis, early bacteriologic smears and cultures are most important. When toxemia is present, antitoxin serum can be given for neutralization and if transfusion is advisable the donor's blood should be the highest antitoxin titer obtainable for staphylococcus. The author feels that having followed this course of treatment that complications were prevented in some cases and greatly mitigated in others.

The patient who complains of a post-nasal discharge, a stuffy nose, perhaps headache, neuralgic pain, asthenopia and frequently associated sore throat and expectoration, the author diagnoses a chronic hyperplastic sinusitis. These low grade chronic sinus infections have many times accompanying or following them chronic pharyngitis or laryngitis, chronic bronchitis and bronchiectasis. There are few definite clinical findings and specific treatment is lacking. Probable underlying factors mentioned are: improper aeration and drainage resulting from mechanical obstruction, allergy or some virulent infection. Each case is an individual problem. The surgeon must use his best judgment as to the line of treatment to be followed, varying from simple colloidal silver packs to simple and radical surgery of one or more sinuses with the many various procedures in use between these two extremes.

The associated chronic sinus infection and chronic non-specific lung infection are discussed briefly. The author feels it is quite important when pure staphylococcus is found in both the sputum of the bronchiectatic patient and the same found in the region of the speno-ethmoid. He considers the presence here, in a case of this kind, of streptococcus and others as being secondary. In addition to routine methods for treatment of this condition he urges the use of staphylococcus toxoid and antitoxin.

Retinitis Exudativa externa. (Coats Disease.) A Contribution to Its Anatomical Aspects. (Retinitis Exudativa Externa. Contribucion a se Estudio Anatomico.) J. A. Sena, Buenos Aires. *Arch. de Oftal. de Buenos Aires*, Vol. IX, p. 387, 1934. Abstracted by E. E. Cass and Published in the December Issue, 1935, of the *British Journal of Ophthalmology*.

Sena says that although anatomically and clinically, the retinitis exudativa of Coats, the retinal degeneration with miliary aneurysms of Leber and the retinal angio-gliomatosis of von Hippel are identical processes, characterized by alterations in the retinal vessels and the presence of exudates, they differ considerably in their aetiology and more especially in their pathology.

In the retinal degeneration with aneurysms the vascular alterations are primary to those degenerative changes occurring in the retina; whilst in Coats' disease there is a true inflammation of the retina originating from toxic emboli, and the vascular alterations are secondary.

Again, according to Lindau and Juris, the angliomatosis of von Hippel is associated with angiomas and cysts in the central nervous system, numerous organs and in the skin, and is not, therefore, a local ocular disease, but a manifestation of alterations in the vascular system.

The author quotes many references to cases of these conditions which have occurred from time to time in the literature.

The retinitis of Coats is usually unilateral; its progress is slow; it usually occurs in young people of less than twenty-five years old, and the male sex is more commonly affected.

In the early state of this disease there are small white exudates, which later become yellow, and over which there is superficial swelling; these exudates become confluent, haemorrhages occur, and finally detachment of the retina may supervene. Pain is produced by increased tension, and this condition is sometimes diagnosed as glioma.

The exudates most frequently occur in the papillary region. Coats stated that the alterations in the retina were caused by haemorrhages, which, originating in the external layers, had become organized. Leber confirmed these findings of Coats.

There are many changes in the retina, which is considerably thickened; there is much sero-fibrinous infiltration, and cells carrying fat granules are formed in the pigment layer; cholesterol crystals are found among the fat cells. Connective tissue is laid down between the retina and the choroid; the choroid does not participate in this process.

In the vessels is a proliferation of endothelium, accompanied by much stretching and dilation until true aneurysms are formed.

The retinal detachment is caused by sero-fibrinous exudate, and the pigment layer is destroyed. Coats gave the name "ghost cells" to poorly coloured bodies which are present in the sub-retinal exudate, and contain small pigmented granules; the author considered them to be swollen leucocytes; according to Leber they are the remains of the degenerated pigment epithelium, and other authors think they are cells from the reticulo-endothelium system.

In reality, it is difficult to ascertain the precise pathology of these cases, as an exact histological examination has only been carried out in an advanced state of the disease.

In a case that the author himself discovered, he was able to observe the anatomy and histology in an eye excised for secondary glaucoma. The child was four years old.

History: At the age of one and one-half years the child had an inflammatory process in both eyes, and after, it was noticed that the right eye was divergent. He was brought to the author, as for one month his eye had been irritable and painful. The child was ill and had lost weight. Both parents were healthy.

On examination the right eye showed slight ciliary injection. The cornea was clear, and a detachment of the retina was present. The retina was swollen and yellow in colour; the retinal vessels did not show much alteration in the periphery, but in the posterior pole they were much more changed. There was no perception of light; the tension was plus two.

The eye was excised, and on examination the choroid and sclerotic were found to be normal. The retina was thickened, and almost completely detached. There was much exudate, forming a mass occupying the sub-retinal space, and separating the retina from the choroid. The retina was specially thickened in the parts where exudation was seen. There was no cupping of the disc, but the nerve head was swollen, and the central vessels were dilated. A microscopical examination showed that the choroid was unaffected and that the process was localized in the retina, more especially in the external layers.

In some regions, apart from the thickening, the retina presented its normal structure, in others there had been destruction of the pigmentary layers, the layer of rods and cones and the external granular layer; in other regions all the layers of the retina were affected.

The retinal vessels showed infiltration and dilations, but the author did not find any true vascular aneurysms. The sub-retinal exudate was homogeneous, but in it were spaces containing cholesterol crystals. A few other places had a granular aspect, and there were seen pale round cells with one or more nuclei, and with pale granular protoplasm, containing numerous small and pigmented granules; these were the "ghost cells" of Coats.

In the retina there were regions of necrosis, and others where there was connective tissue concentrated around the pigment cells, cholesterol and giant cells.

There were no haemorrhages observed in the retinal tissues, but much haemorrhage in the vitreous.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Tumors of the Ovary. A Study of 1,101 Cases of Operations for Ovarian Tumor. By Phineas Bernstein, New York. *American Journal of Obstetrics and Gynecology*, December, 1936, Page 1023.

This is a very detailed report made from the material at the Mount Sinai Hospital during the period from 1924 to 1935. The following conclusions well summarize the extensive statistical information in the body of the article:

"1. A single complete analysis of clinical and pathologic data from a large number of ovarian tumor operations is warranted, since no such report appears in the literature. The facts, of interest to the surgeon and clinician, justify publication.

2. **FREQUENCY:** The simple and dermoid cysts are first and second in order of incidence. Papillary serous cancer occupies a position of hitherto unreported high frequency, namely third; it constitutes eighty per cent of all ovarian cancers, and is four times more frequent than its benign form. It is fourteen times more frequent than the pseudomucinous cancer of the ovary.

"3. **MALIGNANCY INCIDENCE:** 17.3 per cent of all ovarian tumors are malignant; ninety-five per cent of these are cancer and five per cent sarcoma.

"4. **AGE INCIDENCE:** Fifty-eight per cent of all ovarian tumors are in patients between twenty and forty years; thirty per cent are over forty years and twelve per cent under twenty years.

"Sixty-seven per cent of cancer and seventy per cent of sarcoma were in women over forty years; twenty-two per cent of cancer was in patients between twenty and thirty years. Sixty per cent of benign serous tumors are in patients over forty years.

"The fourth decade contains thirty-one per cent of ovarian tumors, the third decade twenty-seven per cent and the fifth decade nineteen per cent. Simple cysts predominate in all three decades.

"5. MARITAL STATUS AND PARITY: Seventy-five per cent of tumors of the ovary are found in married patients; eighty-one per cent are benign and nineteen per cent malignant; forty-three per cent of married women with ovarian growths were parous; thirty per cent of malignant tumors were in parous women.

"6. MENSES: Normal menses occur in 54.3 per cent of patients with ovarian tumors; hyperfunctional bleeding in 26.5 per cent and hypofunctional bleeding in 17.9 per cent.

"In view of the present knowledge with regard to the ovarian effect on menstruation, the high incidence of normal menses is notable.

"Eleven per cent metrorrhagia, 12.3 per cent menorrhagia, and 3.3 per cent menometrorrhagia; and 12.3 per cent menopause, three per cent secondary amenorrhea, and two per cent oligomenorrhea, are the figures obtained

"In fifty-eight per cent of menopause patients malignancies were found. Thus a climacteric patient with an ovarian tumor has a fifty-eight per cent possibility for cancer. Eighty per cent of all malignancy occurs in menopause women.

"7. DYSMENORRHEA: The incidence of this symptom was only fifteen per cent.

"8. METASTASES are noted at operation in seventy-six per cent of ovarian cancer patients; eighty per cent of these are due to papillary serous cystadenocarcinoma. The insidious character of an ovarian malignancy is indicated by this figure, as well as the difficulty in an early diagnosis.

"Twenty-six per cent of metastases are found in the gastro-intestinal and peritoneal systems. The gynecologic tract and omentum contain sixteen per cent and eleven per cent, respectively. Lymphatics, genito-urinary and respiratory systems, and various organs are found to have the remainder of foci.

"Ascites incidence is fifty-four per cent in malignancy; ninety-five per cent of this finding is caused by papillary serous cystadenocarcinoma; seventy-one per cent have clear fluid, twenty-two per cent bloody, and seven per cent purulent fluid.

"9. SYMPTOMS: Pain constitutes forty-four per cent of all symptoms; seventy-five per cent of ovarian tumor patients have this complaint. It is not usually severe even in the late stages of carcinoma of the ovary, and is twenty-five per cent more frequent among the benign tumor cases.

"Gastro-intestinal symptoms, principally nausea and vomiting, constitute only nineteen per cent of complaints; eighty per cent of these occur among the benign tumor patients; eighty-eight per cent of intestinal obstruction is produced by cancer.

"Sixteen per cent of all symptoms and signs, totaling 1,814, are represented by abdominal manifestations; seventy-two per cent are in benign tumors. Twenty-one per cent of patients had an abdominal mass, thirty-five per cent of which was attributed to cancer.

"Respiratory symptoms are due only to the cancer metastases, and bladder complaints are caused

by benign tumors in sixty-eight per cent of instances.

"Eighty per cent of all signs and symptoms are due to benign tumors.

"10. SITE OF PAIN AND TUMORS: Seventy per cent of pain was in either the right, left, or bilateral lower quadrants; eighteen per cent was bilateral, the remainder was divided equally among the right and left lower quadrants. Twenty-one per cent of tumors are bilateral, forty-four per cent right and thirty-five per cent left; fifty-five per cent of malignant tumors are bilateral.

"Thus, sixty-one per cent of right side and seventy per cent of left side tumors cause homolateral pain, while eighty per cent of bilateral tumors cause bilateral pain.

"11. SEDIMENTATION TIME: The significance of this test is stressed in inflammatory, degenerative, and infective processes."

COMMENTS: Statistical studies are frequently not interesting reading and are apt many times to be misleading, but the report on this large group of ovarian tumors contains much valuable information for the individual who carefully studies it.

Wendell Long.

Ovarian Rupture Causing Intraperitoneal Hemorrhage. Report of Ten Cases. By S. Leon Israle, Philadelphia, Pa. The American Journal of Obstetrics and Gynecology, January, 1937, Page 30.

Perforation of the corpus luteum is by far the more common lesion as a cause of intra-peritoneal hemorrhage from rupture of the ovary than is rupture of the graafian follicle. The amount of free blood found in the peritoneal cavity after ovarian rupture may vary from one-half ounce to several liters. Frank bleeding is usually encountered from a richly vascularized perforated corpus luteum, whereas only serosanguinous fluid is found in perforations of graafian follicle.

Ovarian rupture with intra-peritoneal hemorrhage occurs in the child bearing period, more often in young women. There is a characteristic relationship between the time of ovarian rupture and the menstrual cycle. Graafian follicular rupture occurs practically mid-interval and corpus luteum rupture during the last half of the cycle. "The time of corpus luteum rupture seems to be fairly constant, as illustrated by the fact that all ten of the corpus luteum perforations presented below occurred during the premenstruum. This inherently functional relationship to the ovarian cycle is an important diagnostic feature and serves to distinguish between follicular and corpus luteum rupture."

The most prominent symptom is abdominal pain of sudden onset and variable intensity, more often localized in the right lower abdomen. Nausea and vomiting are frequent accompaniments and shock may be seen in fulminating cases. There is usually a moderate elevation of temperature and polymorphonuclear leukocytosis. There is tenderness on palpation of the iliac fossa and bimanual examination may delineate the ovarian hematoma as a soft, tender adnexal tumor.

The differential diagnosis lies principally between acute appendicitis and ectopic pregnancy. The proper diagnosis rests to a large degree upon a proper knowledge of the condition and an ever present suspicion of its existence. The time interval in the menstrual cycle together with this suspicion in every young woman who has acute lower abdominal pain, will do much to correct erroneous diagnoses.

Since it simulates appendicitis closely, if reason-

able doubt exists following an exhaustive differential analysis, diagnosis of appendicitis should be favored and mid-line laparotomy performed.

In differentiation from ectopic pregnancy the points of principal importance are the menstrual history of the patient and the location of the onset in the menstrual cycle of the individual.

The treatment is well summarized in the following brief quotation:

"If appendicitis or ectopic pregnancy can be definitely excluded from the diagnosis, non-operative treatment may be applicable in many instances of ovarian hemorrhage (Pratt). In order to obviate the possibility of erroneous diagnosis, careful observation is the sine qua non of non-operative therapy. Thus, if there is any doubt concerning the existence of a more serious lesion (appendicitis or ectopic pregnancy), laparotomy is indicated."

"The patients exhibiting signs of marked hemorrhage require immediate operation. Whenever possible, the bleeding ovary should be conserved. The simplest procedure is to strip the hematoma cavity of its lining and approximate its walls with a fine catgut suture"

Ten cases of corpus luteum rupture with intraperitoneal hemorrhage are reported.

COMMENTS: This is a far more common condition than it is generally considered to be.

I am sure that there are many mild cases and that in these the condition spontaneously corrects itself with no major residual defect in the ovary. About two years ago I remember seeing three young women within one week's time upon which this diagnosis was made because of premenstrual pain in the right lower abdomen, slight elevation of temperature and slight temporary elevation of polymorphonuclear leukocytes. All were watched carefully to be certain that they did not have appendicitis and in all instances the pain gradually disappeared, next expected menstruation was slightly delayed and though they have all been seen during the past three years, none have developed subsequent symptomatology of this character.

This manner of treatment, of course, is not justified if there is doubt as to the existence of appendicitis or ectopic pregnancy. Nor is it justifiable when the patient is in any degree of shock. However, very careful history and physical examination, together with the suspicion of this condition, will many times spare a patient unnecessary surgical interference in the mild instances of this pathology.

On the other hand there may be profuse hemorrhage as in a young married woman of twenty operated upon by me in May, 1935. She had acute lower abdominal pain premenstrually, slight pain in both shoulder regions, particularly the right, nausea, and moderate shock. At operation there was between five hundred and six hundred cc. of free blood in the pelvis, coming from a rent in a right ovarian corpus luteal cyst. The ovary was removed. One and one-half years later patient had been without symptoms and was in excellent health.

A third point of discussion is the frequency of this condition in association with other pelvic pathology. It is a not uncommon circumstance at operation for fibroid tumors and various pathology of the adnexa to find blood in the peritoneal cavity and one or more corpus luteal cysts with small ruptures in the ovaries. Microscopic examination has confirmed this opinion repeatedly. These various instances of rupture of the corpus luteum with hemorrhage demonstrate beyond question that

it is a common condition and that it should be extremely carefully considered in a differential diagnosis where there is pain in the lower abdomen, particularly if that pain occurred premenstrually.

Wendell Long.

Studies of the Optimal Dosage of Estrogens. An Experimental and Clinical Evaluation. By Charles Mazer and S. Leon Israel. *The Journal of the American Medical Association*, January 16, 1937, Page 163.

There is a brief review of the physiological effects of estrogen in the experimental animal. However, the purpose of this work is an attempt to determine the optimal dosage.

The method employed to determine the rate of absorption and excretion of estrogen entailed the use of forty-two hospital patients convalescing from various pelvic operations which included removal of both ovaries.

"It was therefore assumed that the minimum quantity of estrogen capable of producing and maintaining in the blood and urine of the castrate a concentration of the substance comparable to that current during the premenstrual phase of regularly menstruating women would be an ideal substitution dose in patients with deficiencies of estrogen."

They utilized the accepted normal premenstrual ratio of one mouse unit of the active hormone in forty cc of blood and fifteen rat units in twenty-four hour output of urine. In this study there was daily extraction of the entire output of urine with intermittent blood studies which were essentially corroborative of the urinary changes.

"In order to determine the proper interval for hypodermic use of estrogen, a single dose of from one thousand to ten thousand rat units was given to twelve surgically castrated women and the entire output of urine was extracted daily for a period of five days. Discounting slight individual variations, a perusal of Table 1 shows that the hypodermic administration of a single dose of one thousand rat units of theelin or estradiol benzoate in oil maintains a normal level of estrogen in the blood, as reflected by the amount excreted in the urine, for a period of four days. Larger doses of from five thousand to ten thousand rat units produce a temporary hyperestrinemia, which invariably reaches the normal premenstrual level on the fourth or fifth day."

"The rate of excretion is so proportionate with the dose administered that all the demonstrable estrogen is eliminated by the fifth day, irrespective of the size of the dose."

Observations on the administration of the daily hypodermic dose of estrogen show that even five hundred rat units daily produces an abnormally high concentration in the blood, as reflected by the amount excreted by the urine daily.

"Data relative to oral dosage to supplant the better known hypodermic variants are urgently needed. To that end, twenty-one surgically castrated women were given estrogens orally in doses of from two hundred to six thousand rat units daily in the form of an oily solution on buttered bread. From the data recorded in Tables 2 and 4, it is apparent that estrogens are readily absorbed from the human gastro-intestinal tract. The degree of absorption, as reflected in the blood and urine levels of the principle, varies considerably with the product and the amount administered."

"A careful analysis of Table 4 shows that the minimum daily oral dose of either theelin or estradiol capable of maintaining a premenstrual level in the blood of the castrated woman is approximately five hundred rat units and that the claim of the greater absorbability of estriol when administered orally is not supported by this study."

Analysis of the figures shows that hypodermic administration of estrogen in the human being is only twice as effective as the oral route when judged by the rate of absorption and excretion.

Clinical uses of estrogen are discussed. In this discussion there are several interesting points.

Their view upon the use of large doses and also upon gradual withdrawal in the severe menopausal syndrome is well summarized in the following paragraph:

"Only large doses, quantities producing a definite hyperestrinemia, are effective in inhibiting the hyperfunctional state of the anterior pituitary lobe current in this condition. As emphasized by us and corroborated by Albright and Frank, amelioration of the symptoms is concomitant with a definite decrease in production of the gonadotropic factor of the hypophysis. Our best results were obtained with the use of ten thousand rat units of estradiol benzoate given hypodermically every fourth day until the major symptoms had subsided. Withdrawal of treatment at this juncture almost invariably resulted in recurrence of the symptoms. We have therefore continued treatment with gradually reduced doses for a period of from four to six months, in order to accustom the economy to function on minimal doses or on none at all."

They discuss the effect on the alveolar type of abnormal breast hyperplasia giving instances of observations over a rather long period on women treated for nipple bleeding and multiple nodules in the breast (see comment).

They have treated ninety-three children with gonococcal vulvovaginitis. Their conclusion: "It seems that the optimal dose and length of treatment of gonorrheal vulvovaginitis is one thousand or more rat units given hypodermically every other day for a period of not less than eight weeks." Where dosage was less in amount or duration less in time, recurrences were frequently found.

COMMENTS: In a field where stabilization is badly needed, studies such as this upon the quantitative rate of absorption and excretion are extremely valuable and when added together give us a much more logical plan of attack where estrogens are clinically indicated. Quite interesting in this work is the ratio between the hypodermic and the oral dosages of estrogen at one to two.

In the discussion of treatment of "nipple bleeding" by estrogenic substances, the authors have used several quotations which would give the inference that carcinoma is to be lightly considered in this condition. The statistical information which they have omitted is far more important, that is that fifty per cent of patients with nipple bleeding have carcinoma of the breast at the time. Therefore, in patients with bloody discharge from the nipple, with or without palpable nodules, the presumptive diagnosis must be carcinoma and the terrific risks of palliative treatment with estrogenic substances in these circumstances must certainly add to the responsibility of the physician who would treat such a patient with estrogenic substances over any considerable period of time.

It is also well to add that in the treatment of both gonococcal vulvovaginitis and senile atrophic vaginitis, the administration of estrogen by vaginal

suppository is more effective than by the hyperdermic method. Wendell Long.

Water Balance in Surgery. By Walter G. Maddock and Frederick A. Collier, Ann Arbor, Mich. *The Journal of the American Medical Association*, January 2, 1937, Page 1.

Water normally comprises sixty-five per cent of the total body weight and is fundamentally concerned with every physiological process. In surgical practice, because of disease or treatment, patients cannot take sufficient fluid by mouth to care for their needs. In these situations water must be given by the physician and it is the purpose of this study to determine the water requirements of six patients by figures based on facts rather than experience.

There follows a discussion of the nice adjustment of normal water exchange. The intake is derived from two principal sources: (1) Fluids drunk varying from about eight hundred to two thousand cc. daily and (2) water content of diet plus water of oxidation from body proteins, fats and carbohydrates for energy—estimated one thousand to one thousand and five hundred grams of water daily.

In consideration of the excretory side, water lost in feces is relatively insignificant. The important water excretions are concerned with physiological processes: (1) The water of vaporization calculated at one thousand to one thousand and five hundred grams daily, and (2) the water of urine. "There is no mechanism whereby, when the water supply is low, temperature can be kept within normal limits with use of less water than usual. The vaporizing process may be regarded as having 'preferential rights' on available water over that of the kidneys." The kidneys are markedly affected by the available water, excreting the waste materials with the water left after the other processes have been completed. "On this basis a good fluid intake is shown by a good urine output and a small urine volume of high specific gravity practically always means insufficient water."

Dehydration attendant on surgical operation was studied in a group of eighteen patients. There was a usual decrease in the supply of available water due to the low intake of fluids and food. The water exchange was also disturbed by frequent abnormal fluid losses. The greatest fluid output during the operative and four hour post-operative period was generally vaporization loss. "This made up seven hundred cc. of the average one thousand cc. lost by blood, vomitus, urine and vaporization during this time." It was in this study that the authors observed the great increase of vaporization loss by the sweating in a post-operative "ether bed." Since that time they have only warmed the average bed with hot water bottles.

The daily water losses of surgical patients was determined by transferring the patient to a Bradford frame and weighing at a given hour each day and also weighing all of the ingesta and excreta for the period. "Water vaporized varied from one thousand and five hundred to two thousand and five hundred cc. daily. In general, for the sick surgical patients water for vaporization can be safely estimated at two liters a day."

The water needed for urine varies somewhat with the amount of waste material to be excreted and the condition of the kidney. The average individual with normal kidneys needs to excrete five hundred cc. of urine for normal function. "For the sick surgical patient we believe this to mean an output of at least one thousand and five hundred cc. of urine daily."

Frequently abnormal losses of fluid, such as

vomitus, must be considered in the water exchange.

Fluid taken by mouth can be deducted from the above estimated three thousand and five hundred cc. total daily intake necessary.

In order to determine quantitatively the degree of dehydration possible in the "dehydrated patient," two normal subjects were fed a dry maintenance diet for a number of days until they developed all of the cardinal symptoms of dehydration. "The water balance data of both subjects showed that the signs of serious dehydration produced were the results of being depleted of an amount of water equal to approximately six per cent of their body weight." "This means three thousand and six hundred cc. of water for a patient of one hundred and thirty-two pounds weight."

When water was given to their experimental subjects the urine did not immediately increase but was apparently used for internal chemistry and vaporization.

The authors, therefore, give as the water requirements in dehydration in a dehydrated patient weighing one hundred and thirty-two pounds, (1) water for vaporization, 2,000 cc., (2) water for urine, 1,500 cc., (3) abnormal loss if any during the twenty-four hours, and (4) water to restore depleted fluids (six per cent of one hundred and thirty-two pounds) 3,600 cc. with a total of 7,100 cc.

As to the nature of the parenteral fluids, they feel that the administration of the necessary water is the prime consideration. They think that dextrose should be given to all patients requiring fluids parenterally because it is an ideal fuel for energy, relieves ketosis and protects the liver.

In using large quantities of fluids over a period of time they feel that there is harm to be done by the indiscriminate use of saline solution where the saline is not given directly to replace depletion associated with loss from gastro-intestinal tract. They found that patients given dextrose in physiological solution of sodium chloride gained weight and some of them developed oedema of the low back and ankles, but with the cessation of the sodium chloride and the administration of glucose in distilled water the oedema disappeared.

In situations where there has been vomiting and there is need for replacement of the chloride, they have found it advantageous to administer the glucose in Ringer's solution in preference to physiological solutions of sodium chloride.

Where there is no loss of gastro-intestinal contents, it is their feeling that most patients do not need the sodium chloride and that the dextrose may be given in distilled water.

COMMENTS: Water balance in surgical patients is an extremely important subject. This study, which attempts to give a quantitative basis for the administration of fluid parenterally, is of value in first demonstrating the pronounced need for such replacement, secondly in reinforcing the clinical observations in the care of the sick surgical patients by the admittedly quantitative need for their various functions and, thirdly, in establishing definite basic plans for the administration of fluid in the various circumstances which arise in the care of surgical patients. Wendell Long.

Tumor of the Neck and of the Anterior Mediastinum Originating from the Sympathetic (Ganglio-neuroma). (*Tumeur du Cou et du Mediastin Anterieur de Provenance Sympathique* (Ganglio-neurome). By Wladyslaw Dobrzaniecki and Stanislaw Stankiewicz. *Journal of Chirurgie*, Paris, December, 1936.

Referring to the lack of definite knowledge about

the histo-pathology, the grouping and the classification of tumors arising from the sympathetic nervous system, the authors direct attention to the fact that benign tumors, designated by them "ganglio-neuromas," may have such an origin. This is considered important because one is predisposed to think of the malignant tumors, like sarcomas or lymphosarcomas, growing from connected tissues in the same localities.

The statement is made that the benign ganglio-neuromas are characterized by the presence in them of both young and adult ganglionic cells, showing different stages of maturity.

The ganglio-neuromas may develop in the central nervous system and in the peripheral sympathetic. They most often appear as isolated tumors, sometimes encapsulated, and arising from the cervical, thoracic, or lumbar sympathetic. They may be found in the coeliac plexus, the mesentery and in the supra-renal plexus where they are known as paragangliomas.

The most typical localization of the ganglio-neuromas is in the paravertebral and retro-pleural space a little below the summit of the lungs. However, they are found in other localities, as indicated.

From the clinical point of view, one must not forget that these tumors may be of hour-glass shape, the larger part being found in the paravertebral space and the smaller part in the spinal canal, the two parts being connected by a stem that passes through an intervertebral foramen. In such a case there are cord symptoms.

There is a report of the case of a patient upon whom the authors performed a surgical operation, the findings apparently stimulating them to make an investigation of the subject, and furnishing a foundation for this report by them.

The patient was a male child of two years. Before being seen by the authors, there had been cyanosis and dyspnoea, for the relief of which a tracheotomy was done. Later, he was brought to hospital and observed about two weeks during which time there were attacks of dyspnoea and cyanosis, the tracheotomy tube still being in place. There was a small, firmly elastic, smooth mass just above the right clavicle, it disappearing behind the clavicle. There was an irregular x-ray shadow. There was a paradoxical right diaphragm shadow, indicating paralysis of the right phrenic nerve. There were, also, pupillary evidences of altered sympathetic function. The diagnosis was tumor of the neck and of the anterior mediastinum ("*tumeur du cou et du mediastin anterieur*").

Operation was done under truncular anesthesia of the cervical plexus (anesthesie tronculaire du plexus cervical). The incision was like that for a hemithyroidectomy. The great vessels of the neck were behind and within the tumor. In removing it, the right pneumogastric nerve was sectioned. After the removal of the tumor there was immediate disappearance of dyspnoea and cyanosis.

Three days later there was hemorrhage by way of the tracheotomy canula, and death ensued. Autopsy showed that the hemorrhage was from a small ulceration of the trachea, apparently produced by trauma from the canula.

Microscopic examination revealed the typical structure of a ganglio-neuroma.

The authors indicate that the localization of a ganglio-neuroma in the anterior mediastinum is rare. The conclusion is that it developed in the paravertebral, or retropleural space, and found its way into the anterior mediastinum, its increasing weight probably having something to do with the direction in which it migrated.

It is remarked that the pupillary changes might be due to pressure by a retro-displaced trachea, and it is remarked, also, that paralysis of the phrenic nerve, bringing about paradoxical movements of the diaphragm, is not common.

When these tumors develop in the thoracic region they might be confused with tuberculous spondylitis, with paraplegia. They might, also, be confused with encapsulated pleurisy or a pulmonary tuberculosis. Ganglio-neuromas developing in the lumbar region, as well as in the lower thoracic region, are frequently accompanied by nausea and other evidences of disturbance of the functions of the abdominal organs.

The treatment is surgical. While in some cases, the operation is difficult, it may be comparatively easy in other cases, because a ganglio-neuroma is frequently encapsulated.

LeRoy Long.

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.

404 Medical Arts Building, Oklahoma City

Osteomyelitis of the Bones of the Hand. Sumner L. Koch, M.D., F.A.C.S., Chicago. Surgery, Gynecology and Obstetrics, January, 1937.

Dr. Koch quotes from D. McCrae Aitkin's little volume entitled "Hugh Owen Thomas: His Principles and Practice," the details of a case of particular interest:

"Case No. 1. Capt. J. William J. Jensen, May 11th, came under treatment. Caries of metacarpal bone of index finger.

"When I first saw him he was pale in appearance—night sweats—the wound appeared bloody, but the granulations were pale and the edges of the wound flabby. The history he gave of his own case was that he pricked his finger, which, from neglect, became inflamed, suppurated, etc. His medical attendant removed the third and second phalanges. Afterwards the first became carious, and his medical attendant advised its removal; before doing so, my patient, the captain, consulted the Staff of the Royal Infirmary, Liverpool, and they advised the removal of the index metacarpal of the right hand.

"At this stage he consulted us, E. and H. (Evan, the father, and Hugh, the son), and we gave it as our opinion that the above operation was not needed."

Aitkin continues:

The reasons are annexed: The bone could not be removed without cutting into the wrist, and last, the former operations had failed, how could he tell that this would not also fail. On May 11th the patient came under Hugh Owen Thomas, who dressed the wound, but strapped the wrist and hand firmly. On June 15th all was healed, and then there is a final note, "Well at Rio Janeiro, November 20/57."

Dr. Koch gives further emphasis to the conservative treatment of similar cases. He states that the principle recognized by Thomas so early in his career, is often ignored and often forgotten. It is of especial importance in connection with osteomyelitis of the bones of the hand, for nowhere is the bony framework of more importance for normal function. Nowhere is osteomyelitis secondary to infection of the overlying soft parts more common.

The latter consideration is of significance. Osteo-

myelitis of the bones of the hand and wrist, except when secondary to tuberculous or syphilitic infection, is invariably due to infection by continuity with the covering tissues or the result of compound injuries with primary or secondary infection of the bone. The destruction of bone that takes place might be compared with the erosive action of a turbulent stream of water upon a wall of rock.

Essentials for successful treatment:

1. Adequate drainage of the soft parts.
2. Care to avoid adding secondary infection to that which is already present.
3. Care to avoid adding injury to that which has already occurred.

Not only is it often forgotten that such treatment is adequate, but a second fact frequently ignored—that unless actual sequestration has taken place one cannot determine by inspection, even in a bloodless field, where necrosis of bone ends, where the protective wall of inflammatory reaction begins and ends, and where normal bone begins. For some inexplicable reason that primary law of surgery, *nihil nocere*, is often forgotten by the surgeon when he reads the radiologist's report: "Periostitis, or beginning osteomyelitis, etc."

The surgeon who is confronted with an infected wound of the soft parts reasons correctly that he must not destroy viable tissue nor risk carrying infection more deeply and disseminating it more widely. Yet when confronted with a beginning infection of the covering or superficial tissue of the bone he often cuts ruthlessly with curette or chisel, and carries out a procedure which he would unreservedly condemn if the pathological process involved only the more superficial tissues. It is our belief that an infection of periosteum or underlying bone which is secondary to involvement of overlying soft tissues is pathologically identical with an infection of skin and subcutaneous tissues; and that the same principles of treatment should be applied: adequate drainage with a minimum of operative trauma, and aseptic care of the wound so as not to add secondary infection to that which is present. Adequate drainage, moreover, with infection of the anterior closed space of the distal phalanx does not necessitate the use of a fish mouth incision around the end of the finger, such as has been described in many text books of surgery and lately suggested again by Cotton and Morrison. He have never failed to secure adequate drainage through an incision made on one side of the finger alone; but we have been careful through this incision, under the vision possible with a bloodless field, to cut across the fibrous septa that run vertically from the skin to the periosteum of the distal phalanx, and so to make certain that no unopened pocket of pus was left undrained. On a number of occasions, moreover, we have had to excise the depressed gutter-like scar left after a fish mouth incision so as to secure a smooth and normally functioning finger tip.

If in the course of an infectious process involving the hand necrosis of any part of periosteum or bone takes place, the necrotic tissue will be extruded, just as necrotic skin or subcutaneous tissue slough away, or it can be lifted out of the open wound with very little difficulty. If one attempts, however, to determine the line of demarcation with chisel or bone biting forceps he invariably adds injury, destroys bone which might be saved, and delays the process of healing. These considerations hold true whether the area of bone infection involved the articular surfaces of both bones forming a metacarpophalangeal or an interphalangeal joint.

Case reports might be multiplied indefinitely.

Suffice it to say that for a number of years and with a considerable number of cases under our observation we have not once found it necessary to amputate a finger or a part of a finger because of osteomyelitis. The most striking group of cases we have observed has been that in which infection followed a bite or a fist fight. In spite of the well known virulence of such cases a mixed infection with many types of organisms is invariably present, these patients when treated conservatively have all recovered.

SUMMARY: The essential factors in the treatment of osteomyelitis of the bones of the hand are adequate drainage of the overlying soft parts, cleanly surgical care, and avoidance of trauma—by irritating chemicals, by addition of infection from without, and, particularly, by the use of curette and chisel. If death of bone takes place a line of demarcation forms and the necrotic bone, if it is not extruded spontaneously, can be removed without trauma. To attempt to determine a line of demarcation by surgical intervention too frequently results in destruction of living bone and extension of infection, and often makes recovery of the affected bone impossible.

COMMENT: Everyone interested in surgery of the hand should read Dr. Koch's article. Being an excellent teacher enables Dr. Koch to clearly point out the essentials of treatment so that everyone can understand them.

The same principles of care are employed in cases of osteomyelitis of the bones of the skull and face.

I have been able to avoid amputation in cases of osteomyelitis of fingers and hands by conservative treatment. The restlessness on the part of the patient, or his employer, often helps the surgeon to resort to amputation. Some cases will consume five to six months time for a complete recovery, however, this seems better than the loss of a finger or hand. Geo. H. Kimball.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

PROGRESS OF MEDICAL SCIENCE

Medicine Under the Charge of John A. Musser, Professor of Medicine, Tulane University of Louisiana, New Orleans. Heart Disease in Pregnancy.

In this the author gives some very practical points in connection with the problem of heart disease in pregnancy. Pathognomonic evidences of heart disease are given as follows:

1. Definite cardiac enlargement. That this finding must be used with caution has already been discussed.
2. Serious mechanisimal disturbances, such as true pulsus alternans, heart block not due to digitalis, auricular flutter, and auricular fibrillation.
3. Definite thrills which are unmistakably cardiac. A slight vibration is insufficient.
4. An unmistakable pericardial friction rub.
5. Diastolic murmurs. Certain exceptions in pregnancy have already been mentioned.
6. Expansile pulsation of the liver.
7. Significant engorgement of the neck veins in the sitting position. While this finding may be due to the pressure of tumors and abnormal position of the diaphragm (again pregnancy may interfere), it is particularly significant if associated with en-

largement of the liver and particularly an expansile pulsation of the liver.

8. Persistent arterial hypertension or widespread arteriosclerosis of long duration.

9. Typical classical angina pectoris. This finding is based on history alone and must be evaluated in that light.

There is interesting data in connection with the diagnosis as to functional capacity; the physiologic diagnosis, the anatomic diagnosis and the etiologic diagnosis are given. There is also a splendid discussion pertaining particularly to treatment.

Hugh Jeter.

The Gastric Juice in Patients with Pernicious Anemia in Induced Remission. By S. M. Goldhamer, M.D., Assistant Professor in Medicine, University of Michigan, Ann Arbor, Michigan. (From the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan.) *The American Journal of the Medical Sciences*, Vol. 193, No. 1, January, 1937.

In this the author as a result of interesting observations in connection with the gastric juice in pernicious anemia patients, reports his findings.

He concludes that (1) the volume of gastric juice in patients with pernicious anemia in induced remission is reduced, although exceptionally it may reach the normal range

2. The average gastric juice volume in normal subjects is 150 cc. per hour; 20 cc. in pernicious anemia in relapse and 46 cc. in pernicious anemia in induced remission.

3. No "free" hydrochloric acid was found in the gastric juice of the twenty-seven patients with pernicious anemia in induced remission.

4. The amount of gastric secretion appeared to be related to the age of the individual, averaging 63 cc in per hour in the younger and 31 cc. per hour in the older subjects.

5. The "intrinsic factor" is present in the combined gastric juice of patients with pernicious anemia in induced remission. Hugh Jeter.

Studies in Diabetes Mellitus. V. Heredity. By Elliott P. Joslin, M.D., Clinical Professor of Medicine, Harvard Medical School, Medical Director of the George F. Baker Clinic, New England Deaconess Hospital, Boston, Mass., Louis I. Dublin, Ph.D., Third Vice-President and Statistician, Metropolitan Life Insurance Company, and Herbert H. Marks, New York City. *The American Journal of the Medical Sciences*, Vol. 193, No. 1, January, 1937.

In this the authors have discussed the heredity as an etiological factor in diabetes mellitus and emphasize several important phases of this study. It is interesting to note that they referred to the constitution implying that one may be capable of transmitting diabetes, but show no clinical evidence and give no positive history of the disease. This type of individual is referred to as a "carrier."

Reasons for failure to identify "carriers" are as follows: (1) Cases of diabetes in the family which do not develop characteristic symptoms and consequently are never diagnosed; (2) cases which develop symptoms but escape diagnosis; (3) cases which are diagnosed but are not specified in the patient's record because he does not know this feature of his family history; (4) cases that fail to be identified because the "carrier" in the family did not survive to the age at which diabetes would ordinarily manifest itself; (5) cases in which the potential "carrier," still living, has not yet, but will later, become diabetic; (6) cases where the "car-

rier" dies without issue; and (7) cases which have developed since the original examination of the patient, but are not known because direct contact with the patient has ceased.

One thousand five hundred and fifty-nine cases who reported one or more diabetics in their family have been studied. Several interesting charts are given. One chart includes the incidence of diabetes in the families of diabetics as reported by twelve investigators in addition to the authors of this article.

Twenty-four and five-tenths per cent of the patients in the series reported gave a positive family history. Higher percentages were found in special groups, such as women over men; living children under observation as compared with children who died; in physicians as compared with other patients; in Jewish patients as compared with non-Jewish and in similar compared with dissimilar twins. The percentages of diabetic patients with a positive family history of diabetes are far higher than those for non-diabetic control groups.

They concluded that the predisposition to diabetes seems to be inherited as a Mendelian recessive character.

Hugh Jeter.

"Stone Walls Do Not a Prison Make Nor Iron Bars a Cage"

Winter is a jailer who shuts us all in from the fullest vitamin D value of sunlight. The baby becomes virtually a prisoner, in several senses: First of all, meteorologic observations prove that winter sunshine in most sections of the country averages ten to fifty per cent less than summer sunshine. Secondly, the quality of the available sunshine is inferior due to the shorter distance of the sun from the earth altering the angle of the sun's rays. Again, the hour of the day has important bearing: At 8:30 a. m. there is an average loss of over thirty-one per cent, and at 3:30 p. m., over twenty-one per cent.

Furthermore, at this season, the mother is likely to bundle her baby to keep it warm, shutting out the sun from baby's skin; and in turning the carriage away from the wind, she may also turn the child's face away from the sun.

Moreover, as Dr. Alfred F. Hess has pointed out, "it has never been determined whether the skin of individuals varies in its content of ergosterol" (synthesized by the sun's rays into vitamin D) "or,

again, whether this factor is equally distributed throughout the surface of the body."

While neither Mead's Oleum Percomorphum nor Mead's Cod Liver Oil Fortified With Percomorph Liver Oil constitutes a substitute for sunshine, they do offer an effective, controllable supplement especially important because the only natural food-stuff that contains appreciable quantities of vitamin D is egg-yolk. Unlike winter sunshine, the vitamin D value of Mead's antiricketic products does not vary from day to day or from hour to hour.

Muskogee Academy of Medicine Meets in February

The Muskogee Academy of Medicine announces its fifth annual meeting which will be held at Muskogee, Oklahoma, on February 18 and 19, 1937, at the Severs Hotel. Guest speakers are Dr. Harry Wilkins, Oklahoma City, Oklahoma, brain surgery; Dr. A. I. Folsom, Dallas, Texas, urology; Dr. Henry M. Winans, Dallas, Texas, internal medicine; Dr. E. C. Hamblen, Durham, N. C., obstetrics and gynecology; Dr. L. W. Dean, St. Louis, Mo., oto-laryngology; Dr. Paul S. Carley, U. S. P. H. S., syphilology.

The members of the American Medical Association and members of the daughter branches of the American Medical Association are cordially invited to attend this meeting. No admission will be charged.

Neuropsychiatry in General Practice

The medical staff, of the Menninger Clinic will conduct its third annual post-graduate course on "Neuropsychiatry in General Practice," April 19 to 24, inclusive, at the Menninger Clinic, Topeka, Kansas. The course this year will include a brief introduction to the fields of neurology and psychiatry and a specific application of this knowledge to the large group of cases of psychoneuroses, psychoses and psychogenic and neurological disorders which every physician meets in his daily practice. Suggestions made by those who took the course last year have been embodied in this year's program, in order to make it applicable to the most common practical problems of the physician.

As in previous years, several guest speakers, prominent in the fields of neurology and psychiatry, will appear at the evening sessions of the course.

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REMINDER . . .

*Dues become delinquent
March 15th, 1937.*

THE JOURNAL

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OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXX

McALESTER, OKLAHOMA, MARCH, 1937

Number 3

Prostatic Resection in the Poor Risk Patient*

HARRY M. SPENCE, M.D.

DALLAS, TEXAS

No one can now doubt that transurethral prostatic resection is an efficient method of relieving the bladder neck obstruction. All urologists consider this method as first choice in dealing with the contracted bladder neck, the median bar, the small middle lobe and extensive carcinoma. Some hold that the indications close with the above conditions, while the more ardent advocates of the procedure consider that all types of enlargement, irrespective of size or location, are suitable for resection provided the instrument can be passed. For our purposes in the present communication it will suffice to say that in proper hands the transurethral operation may be expected to give satisfactory results in the great majority of cases.

The bulk of the recent extensive literature on this subject has dealt with the technical details; has compared and emphasized the lower mortality of resection versus prostatectomy; has stressed the value of the early prophylactic resection, and has pointed out the economic saving of the markedly shortened hospitalization of resection cases. While mentioning, it has only secondarily dwelt on the value of this procedure in the poor risk patient. This, of course, is as it should be for any new operation must first demonstrate its superiority on cases uncomplicated by pathology extraneous to the lesion it is to correct and only in this fashion can we

evaluate its intrinsic merits and limitations.

Granted, then, that in properly trained and skillful hands resection is mechanically capable of giving satisfactory functional relief in a high percentage of prostatic obstructions, can it be extended to include that large group of cases designated as poor risks, to whom the operative relief of prostatectomy has formerly been denied? From our experience in the past two years we believe it can be used, not with impunity to be sure, but with a degree of safety hitherto impossible. We wish to demonstrate this by a critical analysis of the poor risk patient with illustrative case histories. It is to the general practitioner rather than to the urologist that this thought must be directed for, it is most often the advice of the former which decides whether and what operation is to be performed. At this moment when charlatanism in this field is so rampant intelligent cooperation of our different medical groups is particularly essential.

First in this study we must decide what constitutes a poor risk and wherein the operative hazard lies. Most such cases fall into one or more of four general categories. In order of frequency and importance these have been found to be: (1) cardio-vascular disorders; (2) renal insufficiency; (3) malignant disease; and (4) the neurological group. Old age *per se* is not included; this acts as a factor only insofar as it is asso-

*Read before the Genito-Urinary Section, Annual Meeting Oklahoma State Medical Association, Enid, April 7, 1936.

ciated with pathology in the aforementioned groupings.

CARDIO-VASCULAR DISORDERS

It is self evident that prostatic obstruction develops most commonly in that age group in which disease of the cardio-vascular system occurs. The age incidence of arteriosclerosis, hypertension, coronary occlusion and chronic myocarditis parallels closely that of prostatic obstruction.

Significant cardio-vascular pathology has rightly been regarded as a contra-indication, relative or absolute, to operations of election and has accounted for many fatalities where surgical intervention has been imperative. The reason for this lies in the danger of a general anesthetic, the operative shock and blood loss in a system with weakened links and low reserves. Prostatectomy has been excluded on these grounds in many instances in the past and the label of a "bad heart" has doomed many old men to a catheter life. Resection, on the other hand, is particularly suited to these cases because it avoids just these results of hemorrhage, shock and anesthetics that predispose to heart failure and vascular accidents. Furthermore it permits early mobilization of the patient and in this way lessens the danger of hypostatic congestion and pneumonia.

Neither the presence of hypertension or arteriosclerosis nor a history of coronary occlusion or decompensation in the past should, taken by itself, rule out a resection. Obviously these factors must be given their due weight in prognosis just as they would be taken into consideration apart from the contemplated operation. The fundamental facts in deciding whether a heart will stand a resection are the presence or absence of decompensation and the degree of cardiac reserve. Decompensation is easily detected and is of course an absolute bar to operation unless corrected. The most useful test of cardiac reserve is also the simplest, namely the response to exertion. By noting the distress incurred in a brisk walk up and down the hospital corridor or climbing flights of stairs we believe a much more valuable and definite idea as to the status of the circulatory system can be obtained than by seven-foot heart plates, electrocardiograms and cardiac consultants.

In brief, any patient not in decompensation at the moment and not overly distressed on moderate exertion is a legitimate candidate for a necessary prostatic resection.

Two cases illustrative of some of these observations follow:

Case No. 1: P. C. H., 17,735—A sixty-year old retired American business man entered the hospital complaining of frequency and dysuria of several months duration. Complete retention set in several days before entry. Three years before the patient had a stroke and almost died, since which time the left side of his body had been paralyzed.

Positive physical findings were a complete left spastic hemiplegia; B. P. 260 150; prostate moderately enlarged. Blood urea 24 mgm. Urine, trace of albumin. R. B. C. two plus. W. B. C. three plus. Cystoscopy showed a moderate enlargement of both laterals and median lobe of prostate; a vesical calculus 2.5 cm. in diameter and a papillary tumor c cm. in diameter arising above the trigon.

After several days of catheter drainage, the obstructing prostatic tissue was resected under sacral anesthesia. Five days later the tumor was fulgurated through the operating cystoscope and a litholapaxy done. The convalescence after both operations was smooth. The temperature never was over one hundred degrees. There was no residuum on discharge. Total hospital stay was eleven days. Ten months later the patient was reported in excellent health and spirits with no significant urinary symptoms.

Case No. 2: P. C. H., 18,099—An eighty-two-year old retired engineer was admitted with an acute retention of twenty-four hours duration. For several years he suffered with increasing frequency, dribbling and dysuria. One year previously he had an attack of coronary occlusion and decompensation from which he gradually recovered.

On examination there was generalized arterio-sclerosis, cardiac enlargement, auricular fibrillation, a distended bladder and a tremendous enlargement of the prostate, obviously carcinoma. B. P. 190 110. The patient was digitalized and

drained by catheter. After eleven days of preparation he was given a sacral block and resected. The temperature never rose over ninety-nine degrees. He was discharged on the eighth day with no residuum and no complaints. He lived in comfort for four months, then died suddenly of a cerebral hemorrhage.

IMPAIRED RENAL FUNCTION

The next cause for regarding a patient as a poor operative risk is impaired renal function. Fortunately the kidneys have a large reserve factor. In fact they can be extensively diseased before clinical symptoms supervene or before the usual tests of renal function (*e. g.*, blood nitrogen and P. S. P. excretion) show abnormal values. By the same token evidence of renal failure is cause for grave deliberation in subjecting a patient to operation on the prostate.

The impairment depends on several factors: (1) degeneration of kidney parenchyma due to chronic vascular nephritis; (2) destruction from back pressure; and (3) suppression of function caused by infection (pyelonephritis). It is evident that some of the damage is permanent and progressive, however by eliminating the back pressure and infection the excretory function will improve greatly if too extensive anatomic damage has not already taken place. It is here that pre-operative preparation plays its vitally important role.

Given a patient with evidence of renal insufficiency his rating as a risk depends on his response to bladder drainage, abundant fluid intake, and urinary antiseptics. Here resection demands essentially the same high standards as prostatectomy for the transurethral procedure offers little extra latitude because if the kidneys cannot handle a minimum load under favorable preparatory measures they will not do so post-operatively. Furthermore an operation on any part of the urinary tract will reflect itself as a strain on the kidneys due to the inevitable trauma and infection, minor though they be. It is true that resection places much less of an immediate operative burden on the kidneys, but to offset this its tendency to engender significant post-operative urinary sepsis in approximately twenty per cent of the cases must be recognized.

However there is a class of patients formerly denied prostatectomy or submitted to it with misgivings where resection seems to work fairly well. In the instances referred to, by the recognized pre-operative measures all evidence of poor function clears up but the laboratory data remain at unsatisfactory levels. Such a man would formerly be sent home on suprapubic drainage for an indefinitely prolonged period. After admitting the precarious status of such individuals several such patients have been resected with no untoward results. Apparently, then, our new modality gives us a limited license to disregard laboratory data if the clinical picture is inviting. Two case histories demonstrating this follow:

Case No. 3: P. C. H., 17,433—A sixty-seven-year old cobbler had suffered from difficult urination for four years, with recurrent attacks of severe pyelitis. Examination showed a man markedly dehydrated, drowsy, with a septic temperature. The bladder contained eight ounces of purulent residual urine. The prostate was moderately enlarged.

The patient was prepared by catheter drainage, fluids, intravenous methenamine. His general condition improved greatly, although the blood urea nitrogen was never below twenty-six mgm., and the P. S. C. excretion was low. However under sacral anesthesia the prostate was resected. An uneventful afebrile convalescence followed. Fourteen months later this man is doing normal labor with no evidence of poor renal function.

Case No. 4: P. C. H., 17,840—A fifty-two-year old farmer entered complaining of generalized weakness, back pains, frequency and small stream of one year's duration. Four years ago he had a perineal drainage of a prostatic abscess.

On examination both kidneys were palpable and tender. The prostate was moderately enlarged and the bladder contained three ounces of dirty residual urine. Cystoscopy and pyelography revealed bilateral hydronephrosis with infected urine from both kidneys. There was a two cm. papillary growth above the trigone which was fulgurated. The blood urea was twenty mgm. Only a trace of indigo carmine ap-

peared in fifteen minutes after intravenous injection.

After some days of drainage the patient was given a sacral anesthesia and the obstructing prostatic tissue resected. The convalescence was stormy with repeated chills and fever reaching 105 degrees, but eventually flattened out, and he was discharged relieved. When observed eight months later he was in good shape except for an attack of hematuria. Fulguration of a papilloma was advised.

MALIGNANCY

At the present stage of our knowledge the satisfactory palliative control of cases beyond hope of cure is our chief problem in dealing with carcinoma of the prostate. That patients with malignancy stand operation poorly is axiomatic in surgery. The occurrence of metastases makes radical attack on the local growth futile. The common necessity for repeated operations as the tumor recurs demands a relatively benign procedure both from the medical and economic point of view.

Transurethral resection supplies the answer to these considerations in malignancy of the prostate. Experience has shown that it can be applied repeatedly to unpromising cases of prostatic neoplasm with a high degree of functional relief. Two case histories bringing out the above points follow:

Case No. 5: P. C. H., 17,081—A fifty-four-year old engineer entered the clinic December 2, 1933, with an acute retention of sudden onset. A two stage suprapubic prostatectomy was done. The specimen was diagnosed carcinoma at this time. He was given x-ray therapy, and did very well for eight months when symptoms of obstruction again set in and he finally reentered the hospital December 11, 1934. By rectum the growth palpated was tremendous. By cystoscope there was seen a scalloped protrusion of tissue all about the bladder neck which was resected. The patient made a smooth convalescence, and was discharged after an eleven day hospitalization and one week later he was back at work.

For six months he was in excellent shape, then evidence of bony metastases to the spine and cord symptoms appeared. He died six months later of general carci-

nomatosis, yet at no time did he have any significant trouble with his bladder.

Case No. 6: L. S.—A sixty-nine-year old retired business man was seen in consultation with Dr. William Leslie. One year previously he had an attack of acute retention which was relieved by suprapubic cystotomy and six months later a cautery punch operation was done. He received only partial relief from this and the suprapubic sinus would not heal in spite of excision and resuture. When seen by us his general condition was poor. There was evidence of cardiac and renal disease. The prostate was large, hard and fixed and obviously carcinomatous. There were eight ounces of foul residuum and constant leakage from the sinus.

It is difficult to imagine a more unfavorable case than this. However something had to be done, so under sacral anesthesia resection was performed. The patient made a good recovery and was discharged in two weeks with the sinus healed, no residuum, a forceful stream, and feeling well. He had no further bladder trouble for the eight months prior to his death from a coronary thrombosis.

NEUROLOGICAL GROUP

Senile dementia and tabes dorsalis are the forms of neuropathology which make one pause before deciding on operative intervention in cases of prostatism in this group. In the former group mental derangement and lack of cooperation make repeated catheterization difficult for patient and attendant alike. Symptoms make relief imperative yet the outlook for any further useful existence or extended span of life is so limited as to rule out a prostatectomy. A resection here makes the daily care much less onerous and in addition an unexpected clearing up of the mentality may be the reward after distressing bladder symptoms are eliminated.

In the tabetic a different problem is presented for here it must be decided how much the retention is due to impaired nerve function and how much to the mechanical obstruction. Recent studies show that the cystometrogram is invaluable in this connection. To date we have not used this new aid but have been governed by the cystoscopic picture, *i. e.*, if this revealed obstructing tissue we have felt that

it should be resected to lighten the load of the damaged neuro-muscular system of the bladder. Prostatectomy in this group was formerly rarely performed. Two cases in point are presented:

Case No. 7: P. C. H., 17,652—An eighty-three-year old retired farmer was admitted to the hospital in a maniacal condition. Two years previously he had been hospitalized three weeks for a senile psychosis and since then he had frequent attacks of dementia. He had difficult, frequent urination and evidence of urinary sepsis for several years.

At the time of the present entry the prostate was moderately enlarged. The bladder was distended to the level of the umbilicus and there was a constant dribbling. The patient fought vigorously against catheterization. After several days of preparation he was resected under sacral anesthesia supplemented by scopolamin. He made a slow convalescence but eventually resumed normal bladder function and his mentality cleared up. Now eleven months later he is in better condition than he has known for years.

Case No. 8: I. H.—A forty-seven-year-old painter was seen in consultation with Dr. V. R. Hamble. He had a C. N. S. leucic infection of many years' duration which vigorous treatment had finally arrested. However many of the stigmata of tabes were still present. He had difficult, frequent urination and a large residuum. By rectum the prostate was small and by cystoscope a definite median bar and contracted bladder outlet were visualized.

A resection was done and a short, satisfactory convalescence ensued. His stream was large and the bladder emptied itself.

ACCESSORY MEASURES

All authorities agree that the preparation for resection must be as rigid as for prostatectomy, for to attempt short cuts here is to invite disaster. The routine preparatory measures are too well known to need repetition, however in handling these poor risks certain accessory measures have been found to promote a successful outcome.

I. VASECTOMY

In the first place bilateral vasectomy is regarded as mandatory. While others re-

port large series of cases with a low incidence of epididymitis although vasectomy had not been done, in our own practice epididymitis was encountered once out of every three cases where the vasa were not cut. For this reason and because the complication is to be considered a major misfortune in an already enfeebled patient, we believe vasectomy is an essential routine measure.

II. INTRAVENOUS METHENAMINE

The use of this drug is likewise considered a valuable prophylactic measure. It must be given in adequate dosage, namely thirty-one grains of "uritone" twice a day from the day of operation until the temperature remains at normal for several days post-operatively. Although no statistics have been compiled we have the distinct impression its use lessens the occurrence of chills and prolonged septic temperatures.

III. SACRAL ANESTHESIA

Of paramount importance in operating on poor risks is the use of sacral block anesthesia in place of spinal or inhalation methods. The localized area anesthetized includes exactly that necessary for trans-urethral work, namely penis, urethra, prostate and bladder neck and its advantage as to safety, duration, stability of blood pressure, and lack of shock stand unchallenged. The reputed difficulties of technic of administration have been exaggerated. We use the method of Lundy with ease and success. It may be stated boldly that this type of block eliminates both the immediate and remote complications of the anesthetic.

CONCLUSIONS

In the preceding paragraphs the varied pathology of the poor risk has been described and some typical examples of resection in each group presented. Several general considerations remain for discussion.

In the first place these patients demand and are entitled to relief from their prostatic symptoms irrespective of the associated pathology. The physician's knowledge of the constant threat of a cerebral hemorrhage in a hypertensive does little to reconcile that individual to the discomfort of a distended bladder. Nor can we

neglect to recognize the unexpected mitigation of apparently unrelated symptoms often brought about by a well performed resection.

Secondly, the standards of success in the surgery of prostatics are somewhat different from those of general surgery. In most instances urologists are dealing with permanently damaged individuals whose life expectancy is short no matter what is done. The fact that a man may die of coronary occlusion a few months after a resection detracts nothing from the value of the operative relief he obtained.

In a sense all surgery is based on probabilities. Consciously or unconsciously we balance the chance of relief against the chance of a fatality. By lessening the latter fact transurethral prostatic resection brings a previously unknown comfort to many feeble prostatics.

Finally, unguarded enthusiasm must not blind us to the unpromising nature of any patient with chronic systemic disease. The absolute contra-indications of decompensation, inadequate renal function and intractable uro-sepsis must never be transgressed upon. Discerning judgment, bold decision, patient preparation must be

linked with skillful technic to surmount the inherent handicap of the poor risk prostatic.

* * *

DISCUSSION

Dr. Callahan of Tulsa:

I think that Dr. Spence has given the idea that the control of urinary infection following prostatic resection is an easy thing. In my practice I have many patients who continue to have urinary infection and distress for months after their resection. I also consider that hemorrhage is a serious complication in any type of prostatic resection.

Dr. Henry S. Browne of Tulsa:

I, too, feel that the decompensated heart case is a bad risk, and also the renal case in which the nonprotein-nitrogen remains fixed at a high level is a poor risk. The cancer cases rarely need resectioning more than twice before they die. In my experience, infection of the urinary tract in these cases is being handled by the retention of the catheter. We do get many satisfactory results in the poor risk patient which contribute to his comfort and to his ability to recover from associated diseases.

—o—

Collapse Therapy in Pulmonary Tuberculosis*

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Carson, an English physician, was the first to propose artificial pneumothorax nearly a century ago. While observing consumptives who were under his care, he found that a few in whom spontaneous pneumothorax occurred, recovered from the disease. It was the result of these observations that prompted him to propose artificial pneumothorax.

Artificial pneumothorax was first introduced as a practical measure by Forlanini of Italy in 1894, and John B. Murphy in this country, independently, in 1898. In

1913, Dr. Cleaveland Floyd of Boston, gave the initial pneumothorax to the late Dr. E. L. Trudeau of Saranac Lake. Since then its use by physicians, specializing in tuberculosis, has become more and more general. Clive Riviere of England made the following statement: "No brighter ray of sunshine has come to illuminate the dark kingdom of disease than that introduced into the path of the consumptive through the discovery of artificial pneumothorax."

Artificial pneumothorax is the most valuable and most widely applicable method of inducing collapse of the lung.

This treatment is frequently unsuccessful due to the presence of pleural ad-

*Read before the Section on General Medicine, Annual Meeting Oklahoma State Medical Association, Enid, April 8, 1936.

hesions, although good results are sometimes obtained even though adhesions are present, provided they are of the string or small band type, that will stretch sufficiently to permit collapse of the diseased area. Due to the fact that obliterative pleurisy occurs so frequently in pulmonary tuberculosis, it is my opinion that better results would be obtained if artificial pneumothorax could be administered in the early stage of the disease. Hawes and Stone, in discussing artificial pneumothorax, make the following statement: "As a general rule, it is the patient in the early stages of tuberculosis who is most suitable for compression treatment. There is no doubt that by its means he will be restored to health and placed on a self-supporting basis much sooner than can possibly be expected under ordinary methods. Nature does her work in curing tuberculosis slowly, and by no means surely. Give nature a chance by all means, but do not delay too long before giving her help in what she is trying to do." After pneumothorax is established, it should be maintained for two or three years at least.

Indications: Artificial pneumothorax is restricted to cases with essentially unilateral disease, although comparatively few patients are subjected to the treatment who do not have any disease on the so-called good side. Frequently we see the disease in the contralateral lung clear up after collapse of the more diseased lung.

The indications may be listed as follows:

1. Hemoptysis, whether slight or severe, provided it is possible to determine from which lung the blood comes.
2. Chronic fibro-caseous tuberculosis with essential freedom from disease in the contralateral lung.
3. Caseous pneumonic types of tuberculosis.
5. Tuberculous spontaneous pneumothorax cases should be converted into a controlled artificial pneumothorax.
6. In tuberculous pleural effusions the fluid should be aspirated and replaced with air, and the pneumothorax maintained according to the underlying disease.

Simultaneous bilateral pneumothorax is indicated in some cases.

The contra-indications are cardiac and renal failure and emphysema.

When adhesions prevent satisfactory collapse, pneumolysis is indicated in selected cases.

Intrapleural pneumolysis was introduced by Jacobaeus of Sweden and Ralph and Ray Matson, in this country, in 1913. It now occupies an important position in the treatment of tuberculosis. Briefly, the operation consists of inserting two cannulae through the chest wall into the pleural cavity, one usually posteriorly, through which the thoracoscope is inserted, and the other anteriorly through which the cautery is inserted. Under direct vision through the thoracoscope, the cautery can be manipulated and the adhesions divided. Practice and skill is required in order to do this delicate operation successfully. Good stereoscopic x-ray films are imperative before doing this operation.

Phrenicotomy, or section of the phrenic nerve, was first suggested by Stuertz in 1911, in order to obtain paralysis of one-half of the diaphragm. He recommended the operation in cases of basal tuberculosis, but experience has shown that occasionally small thin-walled cavities may close, and areas of infiltration in the upper part of the lung heal following this operation. The results will depend upon the degree of elevation of the hemidiaphragm into the thorax. Some authors claim that accessory fibers join the phrenic in twenty-five or thirty per cent of the cases, therefore, when present, these accessory branches must be sectioned in order to obtain paralysis and elevation of the diaphragm. The phrenic nerve takes its origin usually from the fourth, and at times, from the third and fifth, or all three cervical roots. It may also receive fibers from the sixth, seventh and eighth, and even the first thoracic root.

When temporary paralysis of the hemidiaphragm is indicated, the phrenic nerve is merely crushed and accessory branches interrupted if present.

This operation is indicated in some cases when artificial pneumothorax is impossible, due to obliterative pleural adhesions.

Occasionally it is indicated in connection with artificial pneumothorax where diaphragmatic adhesions may prevent collapse of basal lesions. It may be indicated in some patients who are unable to take artificial pneumothorax, due to the length of time that the treatment should be maintained, and the expense. It is recommended by some when artificial pneumothorax is discontinued, and as a preliminary to thoracoplasty.

Paravertebral extrapleural thoracoplasty is the last resort in the treatment of pulmonary tuberculosis; in other words, it is indicated when all the other methods mentioned, are unsuccessful or impossible to attain. It may be partial or complete. Complete meaning resection of the entire

first rib or the first three ribs as recommended by some, and parts of the remaining ribs except the twelfth. When complete it should be done in two or three stages, preferably three.

Extensive unilateral disease with marked fibrosis and cavitation, with the heart and trachea pulled toward the diseased side, the diaphragm drawn up, and the ribs close together, is the most satisfactory type for thoracoplasty.

The operation is sometimes indicated in tuberculous empyema which originates during artificial pneumothorax and cannot be cured by repeated aspirations. We have had two cases during the last year in which good results have been obtained following thoracoplasty.

The Use of X-Ray in the Diagnosis of Breast Lesions*

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In 1913 Salomon published a monograph on local extension of malignant tumors of the mammary gland based on the anatomical, pathological and radiographic findings of sections of the breast after operation. We were unable to find another publication in the medical literature on radiography of the breast until 1929 when an article by Gyones, Gentil and Guedes appeared in the Spanish literature. Following this Warren, Fray, Ries, V. Paschetta, Romagnoli, Seabold and Vogel published the results of their work and drew some very interesting conclusions regarding the interpretations of the normal and pathological changes in the mammary gland.

On a properly executed roentgenogram of the breast it is important that the rays strike the breast in an exact transverse position, otherwise there will be superimposition of the roentgenographic image. In the flaccid or pendulous breast Seabold¹⁷ has constructed a cradle that has proven satisfactory. In our work we have used a rectangular compression bag capable of

being filled with air after it has been placed under the patient. The technique of the examination has been described in detail in previous reports;^{11 12} since then certain changes have seemed advisable. We are now using thirty-six inch distance, kilovoltage varying from fifty-five to seventy, one hundred ma. with an exposure of three-tenths to one second with the Potter-Bucky diaphragm. By using the above factors there is no distortion of the breast structure and the time is sufficiently short to eliminate movement. Several negatives using different exposures may be necessary to establish a clear concept and the value of serial study in the diagnosis of certain conditions cannot be overestimated.⁷

The roentgenogram of the normal breast shows four distinct anatomical zones of different densities:⁸

1. The cutaneous zone with confirmation of the nipple and skin margin in profile.
2. The adipose zone of varying degrees of thickness and showing the fibroglandular prolongations from the mammary mass to the skin.

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3. The glandular zone with the structures appearing as a pyramid, limited at the back by the retro-glandular zone, with some irregularity of the anterior margin especially in the region of the nipple due to the formation of milk ducts.
4. The retro-glandular zone appearing as a smooth, narrow clear space separating the base of the breast from the pectoral muscles.

Pathological processes, either neoplastic or inflammatory, are shown on the roentgenogram by alterations in contour or changes in density of the anatomical zones of the breast. Through the courtesy of the late Dr. Wainwright, microscopical sections of the whole breast have been made showing alterations in contour and outline of the different zones of the breast and also the changes in density with a correlation of the microscopical and roentgenographic findings.

Two distinct histological patterns of the glandular zone have been described,⁴ mazoplasia and cystiphorous desquamative epithelial hyperplasia. Mazoplasia is the term given to the type of desquamation of epithelial cells in the terminal ducts and their acini accompanied by hyperplasia of the pericanalicular and periacinous connective tissue and often with the formation of ducts and acini. On the roentgenogram this state is characterized by a frond-like appearance of the parenchyma with the converging striations forming a fine, indistinct band beneath the nipple and varying amount of non-opaque stroma between the mass of the gland and the derma.

Cystiphorous desquamative epithelial hyperplasia begins as a desquamative epithelial hyperplasia that ends in the formation of cysts; these breasts are often "shotty" to palpation and correspond to the state of chronic cystic mastitis. On the roentgenogram the fibro-glandular striations are marked, the parenchyma appears to fill all the available space to the derma and there is a broad, dense band beneath the nipple. It is in these breasts that both large and small cysts are found.

Between these two extremes are breasts showing characteristics of each type. Whether one accepts Cheatle's or Handley's⁹ explanation of the histological

changes accompanying these different states each presents a typical appearance on the roentgenogram.

After the menopause the roentgenogram shows varying degrees of atrophy of the glandular structure with an increase in the amount of non-opaque stroma and a reduction in the fibrous striations. This replacement is far more complete in mazoplasia than in chronic cystic mastitis. The irregularity of the glandular atrophy may lead to soft mottled shadows representing residual lactating acini¹⁵ or senile parenchymatous hypertrophy.³ The glandular atrophy permits greater density of the cystic lesion than the surrounding stroma.

SOLID BENIGN TUMORS

Solid benign tumors appear on the roentgenogram as circumscribed opaque areas often multiple with a dense periphery but no evidence of invasion of the adjacent tissue. There may be distortion by no interruption of the striations; there is no axillary extension and no evidence of cystiphorous changes.

FIBROSIS

The roentgen appearance of fibrosis of the breast is often not as confusing as the clinical. One sees on the negatives, except in the cases of local trauma,⁵ many faint irregular masses of scar tissue involving both breasts with fine striations extending into the axilla, but no abnormalities in the contour of the anatomical zones.

CYSTS

Cysts are associated with the state of cystiphorous desquamative epithelial hyperplasia. The roentgen findings are characteristic; they appear as smooth, relatively clear areas in the parenchyma of the gland. If a cyst arises in a localized area of the cystiphorous state it may present the appearance of a faint solid tumor without the dense well defined outline.¹³ A cyst containing fluid is relatively less dense than a solid tumor.¹⁸

PAPILLOMA

There are no characteristic roentgen findings to identify these microscopic lesions. The significance of a serohemorrhagic or a hemorrhagic discharge from the nipple is a moot point. Bloodgood² is of the opinion that it more often accom-

panies a benign rather than a malignant lesion. Deaver and McFarland⁶ state that a bloody discharge in a majority of cases is due to papillary growths. Adair¹ says a dark, bloody discharge always means a duct carcinoma. The concensus of opinion seems to be that discharge from the nipple cannot be regarded as of great significance in differential diagnosis.¹¹ One finds on the roentgenogram evidence of cystiphorous desquamative epithelial hyperplasia; this, with the bleeding from the nipple warrants a presumptive diagnosis of papillomata in the absence of a mass or roentgenologically demonstrable tumor.

CARCINOMA

Malignant tumors of the breast infiltrate and destroy the neighboring tissue. They are without definite demarcation and characterized by proliferation. One sees alterations in contour and density of one or more anatomical zones. The tumor appears rather dense and irregular with interruption of the striations. The periphery may be feathery or more compact than the mass giving a false sense of encapsulation due to the compression of the surrounding tissue. Extension into the lymph nodes in the axilla appear as smooth, dense, opaque areas, while the inflammatory nodes are faint and irregular in outline.

INFLAMMATORY CARCINOMA

Inflammatory carcinoma of the breast presents such unusual manifestations that the clinician is often misled. The rate of growth is rapid and the tumor may involve the entire breast and be fatal in a few weeks time. Age trauma, or previous lactation apparently does not enter into the etiology. The roentgen examination in inflammatory carcinoma of the breast shows a homogeneous opacity over the area involved and only by increasing penetration are we able to show the breast structures with the increased fibrous tissue change, the definite tumor mass and marked thickening and infiltration of the skin with the underlying structures adherent to it.

It is possible to study radiographically the mammary gland. The technical factors of the examination are important. The value of the method is shown by the high percentage of diagnostic accuracy in the differentiation of benign from malignant

lesions.²⁰ The identification of early carcinoma in the presence of chronic cystic mastitis before the menopause may be difficult, however, the majority of individuals who come for an examination with the history of a lump in the breast are encountered after the age of forty¹⁰ when the involutional changes are such that the neoplastic characteristics are easily identified.

The limitations of this method are: The inability to recognize¹⁴ microscopical areas of cancer; early malignant degeneration in benign tumors and early carcinoma associated with chronic cystic mastitis. Roentgenograms may establish the presence or absence of a mass often before the disease is clinically apparent; define its mammary or axillary extensions; reveal multiple tumors, which are not necessarily benign; call attention to the importance of distant secondary malignancy;¹⁹ reveal both benign and neoplastic changes and a transition of a benign into a malignant lesion; depict those changes characteristic of the spread of carcinoma along the connective tissue septa. In many cases where the disease seemed to be confined to a single nodule, microscopical sections of the whole breast revealed the frequent presence of impalpable axillary glands and involvement of the lymph structures along the pectoral muscles. These changes, dangerous because of the cells, permeate along these septa, reach the more active lymph streams and are easily carried to distant parts. The roentgen examination offers a permanent record of the findings; is a means of serial study of the breast; has none of the physical limitations of transillumination and in those cases positive for carcinoma, the need for biopsy can be eliminated and is exceeded only by the microscopical examination of excised tissue and we believe will bring patients to operation at a stage when surgery can offer more than palliation in cancer of the breast.

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PRENATAL CARE*

EMMA JEAN CANTRELL, M.D.
WILSON

Statistics compiled from various parts of the country, among people of various walks of life, have shown that the doctor is called upon for prenatal care earlier among the richer classes than the poorer, earlier in the city than in the country. The small town in which I practice is no exception to this rule. Quite a few women have no doctor with them at the time of delivery; a very large number have no prenatal care whatsoever; still others have heard of prenatal care, have an examination made early in pregnancy and feel that it should do for the entire nine months. For these reasons, it is more necessary to give them a very definite plan, one that they themselves can follow by written rules, so that they may realize that prenatal care is something real and tangible.

The first office visit is usually one for which the patient has gone over her period, comes in hoping or fearing that she is pregnant. At that time she has, usually, no definite idea concerning prenatal care. At the first visit a pelvic examination is made to determine, if possible, if the woman is pregnant. She will usually be more patient and give a more accurate history if she knows definitely that she is pregnant. If so, a complete history is taken

with particular attention being paid to the nature of previous pregnancies, if multipara; to the past menstrual history, especially the last and next last periods; to previous diseases of the heart, lungs, or kidneys, to accidents and operations and to the family history, especially concerning tuberculosis, kidney disease, insanity, and family history of obstetrical cases of multiple pregnancies and the like.

On the first visit also a detailed physical examination is made with particular attention given to possible foci of infection: the teeth, the tonsils, the cervix. Also, the heart, the lungs, and the blood pressure are examined, the pelvic measurements taken and recorded. A Wasserman is drawn. The patient is then instructed as to prenatal care and advised that she should have routine examinations throughout her pregnancy. She is given a printed list of rules by which she should be governed during her pregnancy. These are as follows:

1. Patient is to report to the doctor every three weeks during the first seven months of pregnancy and every ten days during the remaining time. Bring a four-ounce specimen of morning urine for examination.

*Read before a joint meeting of the Medical Societies of Bryan, Marshall and Carter Counties, June 1, 1936, at Madill, Oklahoma.

2. Any discomfort such as nausea, vomiting, swelling of the feet, hands or eyelids, headaches, dizziness or hemorrhage from any part of the body should be immediately reported.
3. Once a week measure the amount of urine passed in twenty-four hours. It should be three pints or more. Any marked reduction in the amount of urine passed should be reported.
4. The diet should be well balanced and the usual amount of food should be taken. Diet should include cooked cereals, fresh vegetables and fruits. Meat, fish, and eggs should be restricted to four ounces daily. Water, milk and buttermilk should be taken freely each day. No alcoholic drinks should be taken. During the last six weeks the diet, especially the fats and sweets, should be reduced.
5. The clothing must be comfortable and should hang from the shoulders. There should be no constriction around any part of the body.
6. The breasts should be kept free from pressure. They should be washed with soap and water daily, then warm olive oil applied.
7. A warm bath should be taken daily; the last three weeks no tub bath should be taken but instead a shower or sponge daily. Douches should not be taken unless ordered.
8. Sexual relations should be restricted during pregnancy and should be forbidden during the last six weeks of pregnancy.
9. Plenty of mild outdoor exercise such as walking should be taken, but never to the point of fatigue. Violent exercise such as golf, tennis, horseback riding and swimming should be avoided. Long automobile rides are undesirable.
10. Rub olive oil gently over the abdomen and upper thighs twice a week.
11. Bowels should move at least once daily.
12. When labor pains begin, or if the water breaks, or if there is a blood stained mucous discharge, notify the doctor at once.

These type written instructions are given each patient and she is advised to keep them and refer to them frequently. To all primipara, and to multipara who have not previously had prenatal care, these instructions are read, and any explanation necessary is made.

When the patient comes in every three weeks for her routine examination, an interval history is taken each time as to any symptoms of nausea, vomiting, frequency or burning on urination, vaginal discharge, scanty urination, swelling of the feet, ankles or face, dizziness or headaches. A urinalysis including a microscopic is made at each visit, the blood pressure is checked and the patient is weighed. A record of these is kept on a separate card along with the date of estimated confinement and the pelvic measurements, so that they may be quickly compared. The date that the patient first feels movement is also recorded on this card.

Should the patient have the common symptom of morning sickness, an effort is made early to control this as soon as possible in order that it may not progress into the more serious hyperemesis. Good elimination through the bowels and kidneys is stressed and the patient is given a mild gastric sedative. If the patient can have coffee and toast in the morning one hour before arising, she will be free from the symptoms during the day. Small frequent meals every three or four hours, high in carbohydrate content with restricted fats and proteins often control the symptom. The woman should have a room to herself and coitus should be forbidden.

Should vomiting persist, a speculum examination is made. If there is a displacement of the uterus, the knee chest position is advised. If there is an erosion of the cervix, ten per cent silver nitrate is applied until the tissues are white. This treatment is repeated every third day and often controls the vomiting entirely. Even though the cervix appears entirely healthy, the silver nitrate treatment often proves beneficial.

The use of theelin and other glandular preparations is highly recommended, but have been no help to me so far.

When vomiting is of such a degree that nothing may be taken by mouth, that

bromides by rectum are required in repeated large doses, and intravenous glucose is necessary, the dangerous and pathological hyperemesis gravidarum is present, the treatment of which will not be taken up in this paper.

About the middle of the pregnancy and again shortly before the date of confinement, examination of the heart and lungs is made and the condition of the teeth, which so often are affected, is ascertained. About the middle of pregnancy also, I give the patient a list of clothing a baby should have to be healthily dressed; also, if the delivery is to be made at home, a list

of articles needed for the delivery and immediate care of the mother and child.

Toward the end of pregnancy, the pelvic measurements are again taken in the doubtful cases, for the pelvis often enlarges during pregnancy. At that time also the position of the child is determined, in order that the woman may not go into labor with an abnormal presentation.

With the proper prenatal care practiced, the mortality rate of both the mother and child should be greatly reduced, and the pregnancy made a more pleasant experience.

CROSSED EYES*

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Crossed eyes are the most neglected of all cases in the field of ophthalmology. There is no excuse today for a person remaining cross eyed. Oscar Wilkinson states that "a child who is cross eyed after the age of five years has been neglected." Most squints are more than six years old when they are presented to the ophthalmologist. This seems to be due to the lack of education. The treatment of squint has made considerable progress in recent years, but dissemination of that knowledge has apparently been slow and ineffective. The treatment is twofold, aiming at preservation of or restoration of normal binocular single vision and correction of the deformity.

Crossed eyes most commonly develop between the ages of two and five years. As soon as this is noticed the child should be placed in the care of an ophthalmologist, as the squint in its incipiency can often be cured by non-operative methods. If non-operative methods fail, the eyes should be placed in approximate parallelism early. The correction of squint is like the cure of cancer; success depends on starting early.

The management of these young squinters often taxes severely the doctor's tact, patience and perseverance. Their early age and the complexity of squint makes a difficult problem.

Squint has been with us since history began. Prior to the early part of the eighteenth century, the treatment of squint was of no more avail than that recommended by Hippocrates, Galen and Celsus. In 1727 John Taylor, an itinerant oculist of Norwich, England, introduced his operation for crossed eyes. He traveled through Europe and is reputed to have cured squint by cutting the conjunctiva at the inner canthus and covering the good eye to cause the use of the squinting one. It seems that he did not confide in his contemporaries and has left no record of exactly what he did.

In 1743 Buffon recommended covering the good eye to force the use of the squinting one, and thus improve its vision and aid in the cure of the squint. He also recommended glasses in certain conditions.

The first definite surgical effort in the treatment of squint was made in the first third of the nineteenth century. In 1816 Delpach divided the tendon of Achilles for the correction of club foot. In 1827 An-

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

thony White suggested the cure of squint by means of tenotomy, and this was done on the cadaver by Stromeyer in 1836. The first authentic tenotomy for the relief of squint was performed by Dieffenbach of Berlin in 1839. Many tenotomies followed, but many resulted in such glaring deformities, as, external deviations, sunken caruncles and exophthalmos that the operation came into bad repute.

Von Graefe refined Dieffenbach's operation and his method is still used by some men, but defects of tenotomy led to attempts to strengthen weaker muscles. This was first tried by Dieffenbach in 1842 to relieve an external deviation produced by a myotomy done by himself. However, this was not a success.

Guerin in 1849 gave a more practical procedure and Von Graefe in 1857 with his famous "Faden operation" gave us a more accurate description of an advancement. The same year G. Critchett described his three-stitch operation, of which Beard has said, "This might be called parent of most modern advancement operations." In 1897 Landolt made some improvements on Critchett's advancement. Almost every advancement operation since has been more or less a modification of Critchett's or Landolt's. From this date up to the present time there have been devised many ingenious methods of shortening the weaker muscle and making it cope with the over acting one, and this has been done by muscular advancement, capsular advancements, resections, reefs and by tucks. Then came the combination of operations, the partial tenotomy and advancement. In all of these was the element of inexactness which prevented ophthalmologists from operating on children at an early age before the vicious habits were formed and before it was too late to secure the aid of nature in procuring that all important function, binocular single vision, or fusion of the two images, to aid in obtaining and maintaining straight eyes.

I shall speak only of non-paralytic or concomitant squint which is a functional disturbance.

DEFINITION

It is the condition in which only one eye is straight at a time, the other deviating when both eyes are open. In it the eyes

maintain the same faulty relationship of axes in every direction in which they are turned. In other words, the deviating eye accompanies the fixing eye, maintaining approximately the same angle of deviation in all directions of gaze. The power of the different muscles of the two eyes is usually normal. The eye which is directed toward the object looked at, is known as the fixing eye, the other as the squinting eye. The degree or angle of squint represents the deviation of both eyes manifested by the non-fixing eye.

As to etiology of squint we have had since the beginning of the nineteenth century three theories, namely; the muscular theory, the accommodation theory and the fusion theory. Recently Wilkinson introduced, but does not claim originality for, the nervous theory. All have ardent advocates and all have elements of truth. Some cases seem to support all four.

1. The muscular theory attributes the defect to an over acting muscle.
2. The accommodation theory of Donders claims that squint is produced by disturbance of the relation of convergence and accommodation due to hypermetropia (far sight) or to hypermetropia and astigmatism.
3. The fusion theory or Worth's theory ascribes squint to a lack of proper development of the fusion faculty. This faculty, which we think exists, presides over fusion which demands such adjustment of the two maculae that the image of an object seen will fall on the macula of each eye. These two images, slightly dissimilar, in turn, are sent to the cortical center of vision which blends or fuses them and only one object is seen. This faculty in the average normal child is fairly well established at the end of the first year, and it is thought to reach its development normally by the end of the sixth year.
4. Nervous theory includes pathologic nervous lesions, and functional nervous manifestations.

A certain number of squint cases follow paresis or paralytic lesions which occur early in life and leave no trace. These squints occur early and are associated with marked amblyopia. Duane classified a cer-

tain number of these under congenital squint.

All children with concomitant squint show some general nervous instability.

Contributing causes of squint include:

Hypermetropia (far sight).

Heterophoria.

Anisometropia.

Amblyopia.

Structure and shape of the orbit and eyeball.

Declination.

Acute illness.

Injury at birth.

Heredity.

Miscellaneous causes.

Edward Jackson states that "the causes of squint include: Imperfect development of the coordinating mechanism of binocular vision. Interference with coordination by abnormal accommodation, excessive or deficient (hyperopia or myopia) reversion to the monocular vision type with diverging visual axes. Paralysis and paresis of the extra-ocular muscles, or mechanical interference with them. Worth's fusion theory is useful, but few cases are relieved by the use of fusion training without other measures."

In the treatment of squint we attempt to remove interference, and cultivate binocular single vision. It is divided into non-operative and operative.

Non-operative treatment consists of four subjects:

1. Constitutional.
2. Optical correction.
3. Visual training.
4. Training of binocular vision, or the fusion faculty.

Constitutional: When we review the many factors contributing to squint we must admit that concomitant squint is not alone a manifestation of an ocular condition. The squinting child is usually below par physically and neurologically and our first duty is to call in consultation the proper expert and place our patient in the best possible physical condition.

Optical correction: The child's refraction should be most carefully done objectively by means of retinoscopy after complete cycloplegia with atropine. The entire future of the case may depend upon securing an accurate refraction. Then glasses should be ordered which correct all, except 0.25 diopter, of the full hyperopia and all of the astigmatism. Glasses can usually be ordered as early as two years of age, but this depends on the child.

Visual training: This is to prevent deterioration of or to improve visual acuity in the deviating eye. It is accomplished by means of some appliance to inhibit the use of the good eye and thus force the use of the squinting eye, or by the use of atropine in the good eye to so blur its image that the use of the deviating will be preferred. These methods of visual training are not necessary in alternating squint. Where central fixation is lost, use a bandage on the good eye constantly for three or six weeks. Often this produces a very definite fixation and improvement in visual acuity. If at the end of six weeks central fixation has not been secured, and there has been no improvement in visual acuity it is of little benefit to continue longer and we can expect only a cosmetic result.

Training of binocular vision or fusion: Wilkinson states that "no set of eyes can be put straight and kept straight without binocular vision or fusion." This faculty, innate in man, is the one essential in curing squint. Therefore, it is important to determine its presence, its degree, and adopt methods to increase its amplitude. Worth has given us three grades of binocular vision: First, simultaneous macular perception is the ability to recognize objects perceived by each macula simultaneously. There is no particular desire for binocular vision. The fusion power is of the lowest grade, and any contributing cause may upset binocular vision and cause squint.

Second grade comprises those who have fusion with some amplitude.

Third grade is what Worth calls the "sense of perspective." Each eye sees an object at a different viewpoint from the other, but these images are so blended that we are cognizant of but one mental impression. This sense of perspective enables

us to determine depth and fullness of objects and it cannot be obtained with the use of one eye only. Worth has said that "with a strong fusion faculty and good vision in each eye nothing but a paralysis of the ocular muscles could cause squint, and that produces an intolerable diplopia."

In training binocular vision we resort to some form of the stereoscope for orthoptic treatment. This is done after we have used atropine, glasses and the eye pad.

Orthoptic treatment is tedious and requires much patience and imagination. Some cases are corrected by glasses alone, others by glasses and orthoptic exercises, but many require surgery.

When we are convinced that orthoptic treatment will not straighten the eyes we operate to put the eyes in approximate parallelism, and continue orthoptic treatment. In the average case we plan to use non-operative treatment for about six months before operation.

Before operation squint cases must be studied carefully. A good plan to follow is Duane's method.

Most convergent squints develop out of a simple convergence-excess to which is added a divergence-insufficiency. I use a recession operation after the method of Agatston, making one millimeter of recession of medial rectus for each five degrees arc of squint. If that is not sufficient I use a resection of lateral rectus after the method of Reese allowing one millimeter for approximately two degrees arc of squint. If further correction is necessary I use a recession operation on the opposite medial rectus. Either eye may be operated upon but the patient always selects the non-fixing eye.

The degree of squint may vary from day to day or hour to hour, therefore, I advise my patient that more than one operative setting may be required.

In conclusion I wish to emphasize that crossed eyes should be straightened early to take advantage of nature's optimum period for development of binocular vision. They occur in those with general nervous

instability, and if not corrected a serious inferiority complex surely develops.

* * *

DISCUSSION

Dr. C. B. Barker:

Doctor Reed has covered the subject very thoroughly. I wish to stress just a few of the points on diagnosis and treatment.

Most of us older doctors have certain procedures which we have tried out with more or less favorable results, and the following is what has given me best results. The diagnosis of the phorias is made by lenses, prisms and cover tests. The tropias, anybody can see that an eye squints.

The first thing is to correct all errors of refraction, and I prefer to start treatment as soon as the patient presents himself. Strong plus lenses will be worn comfortably at one year of age.

I am taking it for granted that all non-surgical treatment has been tried. The next step is to measure the strength of individual muscles and get the ratio between it and its opponent. This is done with prisms, perimeter and the position of the cornea, or pupillary margin in relation to some fixed point on the lid, as the punctum and the external angle.

Now, when we have found whether we are dealing with a convergence excess or a divergence insufficiency or both, we are able to attack the muscles with some degree of certainty. How do we determine an excess or insufficiency? Convergence excess has greater deviation for close, as compared with distance.

Our surgical treatment should consist of strengthening the weak muscles and weakening the over active muscles. We prefer to operate before the age of six or eight years of age.

In eso-tropia of high degrees, as forty degrees or more, I do a resection and advancement, with a recession, on the poor eye. In the low degrees and in young children, I prefer a tucking and a recession.

EYE MALINGERERS

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Malingering is the act of feigning or perpetuating an illness or injury, either subjective, objective or both, intended to deceive, with the object of gaining sympathy, to escape duty or obtain money.

Malingers are a menace to industry and for the most part represent the drones of society. Weakness of human character is responsible for its existence, encouraged to a certain extent by the laws which provide no punishment for the attempted fraud.

Malingering in one of its many forms may be met with in public hospitals, asylums, jails, in military and more especially in the industrial accident and health insurance, and may be resorted to in suits for personal bodily injuries and by those on trial for crime.

The malingeringer should be recognized because he is a drain on the army pension systems, public institutions, private charities and insurance companies. The doctor always sees the case of a malingeringer at some stage and the fraud can often be detected or perpetuated with his acquiescence.

I wish to point out in this paper that malingering is of sufficient frequency and importance to require serious attention and particularly that in almost every case of malingering, some doctor, either consciously or unconsciously aids, abets or encourages the imposter.

We do not limit malingering to an out and out fraud in the mentally sound, as regards disease or disability, with neither organic or functional basis but include in the terms a less frank fraud, such as exaggeration or prolongation of illness or injury or false imputation as to cause.

In cases where malingering develops after recovery, the motive is either to get compensation for pre-existing pathological change due to some disease or accident, or to get compensation when no permanent

damage has resulted from accident. This is called simulation. The injured may also claim that the damage done to an eye by traumatism is of greater extent and severity than is really the case. This is designated as exaggeration. This may involve only one eye but it is not uncommon to find a patient claiming that an injury to one eye has injured the other through sympathy, with a resultant loss of vision.

It is very exceptional to find a claim for total blindness in both eyes as it would be too inconvenient and difficult to simulate. The general demeanor of the claimant, reaction of the pupils to light and the convergence on the prism test would eliminate a total blindness.

The malingeringer exaggerates his attempts at vision in order to impress the observer that his case is genuine. He will gaze and stare, turn his head from side to side, lean from the chair in order to convince the examiner that he is making every effort to see, then declare his inability to do so. His answers to questions are clearly prepared before hand and are inconsistent and variable. When asked to read the letters on the Snellen's type, he will sway from side to side and refuse to see the small letters, and as we get to the large type and insist that he try to call a part of the letters, he will probably make a stab at one letter and usually call it an "I," which to my mind is almost an admission of malingering. The letter "I" does not appear on any test type as it does not subtend an angle of five minutes, except in the vertical. His general demeanor is suspicious, he sometimes assumes a boisterous manner, bordering on the aggressive for the benefit of the examiner.

To outwit cases of this type is our task, and any display of hostility or lack of patience will usually greatly impede our progress in proving the deception. We had better attempt to meet deception with deception by pretending to believe in his

incapacity and show a sympathy with his condition.

When a claimant presents himself for examination of his eyes for an alleged injury or loss of vision, it is well to get a complete history of his condition prior to the injury, the injury and his condition immediately following and up to the time of the examination. Of especial importance are his statements as to his complaints which are often inconsistent and follow about the same in all cases, that is: eyes pain, has headaches, vision blurs when he attempts to read, light is painful, eyes water and he cannot see as well as before the injury. From the nature of the purported injury, his complaints and general demeanor, we have a fair idea as to what we may expect upon subjective tests.

After the claimant's history has been recorded for what it may be worth, external examination of the eyes and lids should be made with the condensed light and the binocular magnifying loupe; the presence or absence of scars and wounds is noted, especially as to whether or not they could have been caused in the manner stated. It is especially important to distinguish old scars of the cornea which must have been present before the injury, from fresh scars or abrasions which could have been made at the time stated. In other words, we attempt to find sufficient evidence of the injury to account for the disability claimed.

It must be remembered that it is very easy to differentiate between old pathological changes and those due to a recent injury; that it is difficult and often impossible to do so several months later. It is not difficult to differentiate between scars from lime or acid burns and those of trachoma, but it is impossible to state whether the burns are one, two or a dozen years old.

The question of the freshness of such evidence is often not easy to decide, and here the slit lamp or corneal microscope gives information which may be of the greatest value. This instrument throws a fine beam of light through the transparent parts of the eye, so that with it we may exactly locate the level of any lesions, determine whether an injury has penetrated the cornea or not, the presence or absence

of cells around an opacity of the cornea (which if present would indicate a relatively fresh lesion). With this instrument we are able to see the fine deposits of iron oxide which collect in eyes that contain a piece of steel. Thus, even if the steel has been absorbed or if the x-ray picture leaves us in doubt as to whether the steel is in the eye or just outside, we can find reliable evidence as to where it has been, with the corneal microscope.

After a careful objective examination, we fail to find evidence of injury, pathological or structural change, and note that the media are clear, the fundi, tension, tunics, reflexes and muscular balances are normal, we proceed with the subjective tests as to manifest visual acuity.

We next note with the keratometer, the corneal curvatures and what amount of corneal astigmatism may be present, if any, and at what axis. With the retinoscope, we note if there is any appreciable amount of either hyperopia or myopia.

Upon subjective or visual acuity tests, we first have claimant to read, with both eyes open, the ordinary Snellen's type, at twenty feet, beginning with the 20 15 line and going up to the line he calls correctly, or beginning with the 20 200 line and going down. This is noted as his manifest binocular. Then covering first one eye and then the other, with the same procedure we note his manifest in each eye separately. Then we attempt to refract along the lines suggested by the keratometer and retinoscope to the point of best vision. This will give his manifest visual acuity on open test.

After completing the objective examination and recording the manifest visual acuity in each eye, we proceed with the different malingering tests, the most common being fogging, the cross cylinders and the prism.

In the foregoing test, we place over each eye a plus lens of sufficient strength that the claimant is unable to see the 20 200 line, gradually reducing until we obtain the correction which he admits as his best vision. (This with both eyes open.) If he admits a normal vision in one eye, we again fog with a strong lens, having the patient close both eyes, neutralizing the lens over the eye with the least amount

of vision, keeping the better eye overcorrected and having him open both eyes, after a short period of rest, with the smallest type he was able to read with both eyes open, we have him read the line backwards. This he will often do if he thinks he is reading with both eyes. If unsuccessful with this, we try to cross cylinders over each eye, with both eyes open, gradually revolving the one over the bad eye until it is neutralized.

Another method is to have the claimant advance to the type from the twenty feet, until he is able to read a certain line, say the 20 20. If he is able to call the letters at ten feet, we would record this as 10 20 or the equivalent of 20 40 Snellen's and so on up to within one foot, using the distance at which it was correctly called as the numerator, the number type as the denominator and transposing to the Snellen's equivalent.

The prism test often works very satisfactorily. In this we place a prism, base down, over the good eye, splitting the pupil with the edge of the prism, and with his bad eye covered, have him read the two lines seen with the one eye, monocular diplopia. Then uncover the bad eye and slipping the prism up which continues the diplopia but in this case being binocular, have him read both lines, one forwards and the other backwards, noting the ability to read the line seen with the bad eye which would be the lower line.

Another test we often use is the combination of the pin hole disc over the good eye and the stenoptic slit (with slit placed vertical) over the bad, having the correct position for binocular vision. Then elevating the chin slightly or enough to obstruct the view through the pin hole disc, continue the vision through the slit. It is necessary to explain that both eyes are to be kept open at all times for these examinations and to see that this is done, have claimant's face sufficiently illuminated and be in front, watching him at all times to see that he does not close either eye while the test is being made. He may become confused as to which eye he is seeing with and attempt to close first one and then the other. This, we must be ready to detect and immediately step into his

line of vision, insisting that he do as he has been instructed by keeping both eyes open, making some explanation as to why it is necessary.

The chromatic or color test we sometimes use is the alternate red and blue letters, read through a blue and red lens, placed before the eyes in the trial cell. The claimant will read the red letters from one eye and the blue from the other.

We sometimes find evidence that a claimant has been coached on the ordinary Snellen's type. He will only admit certain letters, the same with either eye, refusing to see anything with the lenses or even the trial cell placed before his eyes, admitting only the letters he has been coached to call.

The above malingerer tests are the methods commonly used to detect malingerer and in addition to the detection we can estimate the percentage loss as this is very necessary in claim cases. There are many other methods of detecting the malingerer, especially those that simulate a total blindness, but as it is necessary in most cases to estimate the visual loss, we will not attempt to describe the other methods used for this purpose.

This being such a broad subject, we have not attempted to take up a discussion of the visual field, extrinsic muscular imbalances, efficiency losses or subjective complaints, most awards being based on the visual acuity.

The fact that no objective findings can be discovered to explain the subjective symptoms of which he complains, and that the usual treatment for such conditions is of no benefit, in fact the patient will often claim they are getting worse, will suggest malingerer.

Objective symptoms of irritation and inflammation of the conjunctiva are often produced by artificial means to deceive the physician or examiner, either by vigorously rubbing the eyes just before examination, by introducing into the lower conjunctival sac, various substances. Among some of the things commonly used are cement, cigarette ashes, powdered tobacco, soap, pepper, salt, match heads; red ink or mercurochrome solutions often

being used, thinking it will appear as a bloody discharge.

This artificial conjunctivitis is sometimes quite severe. It is however, easily recognized by the fact that it is confined to the lower cul-de-sac and lower half of the bulbar conjunctiva, the upper half and the upper fornix being free from irritation. In most cases of this character the discharge does not conform to the severity of the reaction. I have seen cases with a rather violent conjunctival injection, limited to the lower fornix and lower bulbar conjunctiva with a circumscribed epithelial eschar about the lower center of both fornices, about one-sixteenth inch in diameter.

A point of importance is that such inflammation quickly disappears if the claimant is confined in a hospital, his belongings locked away and his eyes kept bandaged. A real conjunctivitis will be made worse under bandage.

Not infrequently artificial mydriasis is produced with atropine, either in one eye or both. We usually suspect this from a paralysis of the accommodation and the non-reaction of the pupil to light. Such cases being admitted to a hospital and their clothes taken away, will at the end of a week or ten days reveal the deception.

It is incumbent upon us as ophthalmologists, to make a very careful examination of all eye injuries at the time of the injury, making note of any pre-existing pathological or structural change in or about the eyes, estimating the visual acuity of each. For at this time most claimants do not think of malingering and will give a truthful account as to the condition of each eye prior to the injury. If any manifest reduction of visual acuity is recorded, they should be refracted to note any refractive errors and to note the acuity with correction. If there is any discrepancy between the visual acuity and the change due to the traumatism, it should be noted. This data will be of inestimable value later in detecting malingering where a patient files a claim for injury or compensation.

After an eye injury such persons have a peculiar advantage, since all our tests of vision are subjective and based on his statements of what he sees. An encounter

with a representative of this type may prove a battle of wits in which his native cunning will make it seem that our years of special training were passed in a kindergarten.

Painting the Orange

Today the orange is universally recognized as a rich source of vitamin C and therefore a desirable fruit for children. The natural color and other characteristics of the rind vary with different varieties and with the season. Once these features served to some extent as marks of identification. This is not true today, when there is current a tendency to "improve on nature." The inherent color of the rind of certain varieties of the orange is not an index of maturity of the fruit or of the degree of sweetness of the juice. Green pigment persists in the skin of mature fruit of high quality. Many growers apparently believe that the presence of chlorophyll in the pericarp impairs the marketability of the fruit. Several years ago the practice of exposing oranges to ethylene gas for from two to four days was introduced. The ethylene causes a blanching of the green color and a consequent unmasking of the yellow pigments also present in the skin. The United States Department of Agriculture has ruled that this process does not in itself constitute adulteration, and there is evidence that the nutritional value of the juice is not affected by it. More recently a rapid method of coloring has been employed. The fruit is dipped in a solution of a harmless coal tar dye, which gives to the resulting "painted oranges" a more uniform, brilliant color. Food laws require that the presence of dyes must be declared by having the phrase "color added" stamped on each orange. The staining of unripe or damaged fruit by any method in simulation of oranges of greater maturity or of superior quality constitutes adulteration under the Food and Drugs Act. The degree of maturity of the orange is determined by chemical analysis of the amount of sugar and citric acid in the juice. Unless there are eight parts of sugar to each part of the acid, the fruit is held to be unripe and inferior. The state of Florida has recently provided rigid regulation of the packaging and marketing of citrus fruit according to more exacting standards than those required by the federal government. The United States Department of Agriculture accordingly has agreed to wait until September, 1937, before action will be taken. Thereafter interstate shipments of inferior oranges that have been colored will be liable to seizure and destruction. The Florida regulations in large measure should serve to remove the necessity for federal action. Accurate information concerning the effect of the artificial coloring of oranges on the consumption of the fruit is not available. The phrase "color added" stamped on each stained orange has certainly puzzled alert housewives, many of whom under the direction of their family physician are buying oranges for the baby. Consumers have questioned whether the colored oranges are of high quality. They have tasted the juice warily and have inquired whether the vitamin content is as high as in the uncolored fruit. Some consumers have expressed the opinion that colored oranges do not keep as well as the untreated russet colored fruit. Others have asked whether the "painted" rind is suitable for making marmalade and candied orange peel. These questions are evidence of intelligent interest on the part of the public. The promulgators of the coloring of oranges should arrange to answer them decisively by scientific evidence.—*Journal A. M. A.*, December 26, 1936.

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McAlester, Oklahoma

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

VENEREAL CONTROL

The program for venereal disease control which is under the direction of our State Health Commissioner, is receiving the attention of both the laity and medical profession. Many lay organizations are having speakers before them acquainting them with the plan and purposes of the campaign. There is no question but what this program is receiving practically the unanimous endorsement of the doctors of the state, but it is very important that the operation of this plan should be kept in the hands of the organized medical profession and not allowed to be operated by the laity or cults.

The State Health Commissioner will, I

am sure, present this program to each County Medical Society and ask them to set up the machinery to put the plan in operation, and when this is done it is important that each County Medical Society have a complete program outlined in order to immediately take over the work. It seems that it would not be best to establish free clinics.

The patients will fall into three groups—the indigent, those in the low wage scale, and those able to pay the usual fee, and we must be prepared to give service to all three groups. The indigent case will, of course, have to be cared for at the expense of the state; the low wage earner should be able to receive the necessary service at a fee in proportion to his income, and they should also have the opportunity to select the physician of their choice.

The problem will, of course, be different in different localities. Where there is a full-time health unit with a medical director, the indigent cases can probably be cared for by this unit. But where there is no full time health unit some other arrangement, under state assistance, will have to be made.

We think there are two things to be avoided—one is the free clinic and the other is the establishment of a fee schedule. The fee schedule will not be practical as those in the low wage scale should pay in proportion to their income and economic responsibilities.

After considering the foregoing we would appeal to give to the State Health Commissioner hearty cooperation in this program, being careful, however, to protect yourselves from the evils of the free clinic or fee schedule.

DANGEROUS RESOLUTION

It might be well for the physicians of Oklahoma to interest themselves in House Resolution Number 4650 to amend the United States Employees' Compensation Act in which every osteopath in the United States will be authorized to treat injured and sick employees of the Federal Government.

The bill at this time is before the Committee on the Judiciary and a member of

that committee is our Representative, the Honorable R. P. Hill. Pressure is being brought to bear, it is understood, for an early and favorable report and you will do well to interest yourselves sufficiently to communicate with your Congressman and Senator relative to this matter and let him know in no uncertain terms that you are opposed to any legislation that will allow this work to fall into the hands of any cult. Federal employees are entitled to scientific service and this will be most decidedly interfered with if the above mentioned resolution is adopted.

—o—

EXHIBITS AT ANNUAL MEETING

Doctors who wish to reserve space for exhibits at the Annual Meeting of the Oklahoma State Medical Association in Tulsa, May 10, 11 and 12, should write immediately to E. Rankin Denny, M.D., Chairman of the Committee on Scientific Exhibits, Medical Arts Building, Tulsa, Oklahoma.

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 30.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	170.00
Caddo	240.00	90.00
Canadian	230.00	75.00
Carter	260.00	130.00
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	190.00
Custer	230.00	210.00
Garfield	420.00	250.00
Garvin	150.00	150.00
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	15.00
Haskell	60.00	40.00
Hughes	170.00	140.00
Jackson	160.00	120.00
Jefferson	110.00	
Johnston	10.00	
Kay	320.00	290.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	50.00
Logan	200.00	100.00
Major	30.00	
Marshall	50.00	
Mayes	110.00	10.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	60.00
Murray	110.00	
Muskogee	520.00	100.00
Noble	40.00	
Nowata	50.00	50.00
Okfuskee	150.00	100.00
Oklahoma	2740.00	1115.00
Okmulgee	280.00	210.00
Osage	220.00	220.00
Ottawa	310.00	90.00
Pawnee	100.00	90.00
Payne	250.00	160.00
Pittsburg	350.00	200.00
Pontotoc	300.00	300.00
Pottawatomie	330.00	160.00
Pushmataha	75.00	40.00
Rogers	120.00	80.00
Seminole	320.00	110.00
Sequoyah	10.00	10.00
Stephens	220.00	80.00
Texas	50.00	20.00
Tillman	100.00	110.00
Tulsa	1980.00	1200.00
Wagoner	40.00	40.00
Washington	250.00	240.00
Washita	120.00	
Woods	170.00	140.00
Woodward	260.00	150.00

NOTE—Corrections and additions to the above list will be appreciated.

OBITUARIES

DOCTOR CHARLES T. HARRIS

Dr. Charles T. Harris was born in Alabama on February 17th, 1870. He graduated from the University of Tennessee Medical College in 1901, and located in Kiowa, Oklahoma, in 1911, where he practiced until his death in a McAlester hospital on February 7, 1937, after an illness of ten days. His entire practice was in Oklahoma.

Dr. Harris is survived by his wife, Mrs. Lillie Harris, of Kiowa, and five children, Mrs. Bertha Jones, Ramona, Cal.; Jess Harris, Los Angeles, Cal.; Dr. Trester S. Harris, Los Angeles, Cal.; Miss Leona Harris, Los Angeles, Cal.; and Dr. C. Preston Harris, Kiowa, Okla.

Three brothers and four sisters also survive. They are Dr. E. M. Harris, Cushing, Okla.; Dr. J. M. Harris, Wilburton, Okla.; L. B. Harris, Ocean Park, Washington; Mrs. Cona King, Hamlin, Texas; Mrs. Lela Pyeatt, Hamlin, Texas; Mrs. Lora Curtis, Abilene, Texas; and Mrs. Panola Curtis, Dallas, Texas.

Dr. Harris was prominent in the civic and professional circles in Pittsburg County and southeastern Oklahoma. He was a member of the Kiowa Blue Lodge, A. F. & A. M., and the Scottish Rite Bodies at McAlester. He also held membership in the County, State, Southern and American Medical Associations.

Funeral services were held at Kiowa on February 9, Dr. Samuel R. Braden, pastor of the First Presbyterian Church of McAlester, officiating.

Editorial Notes—Personal and General

DR. and MRS. W. ALBERT COOK Tulsa, spent February in Southern Texas and points in Mexico.

DR. ALLEN R. RUSSELL, McAlester, spent the latter part of February with Dr. John R. Caulk, St. Louis, doing special urological work.

DR. R. M. ADAMS announces the removal of his office from Hobart to 325 West 24th Street, Oklahoma City.

DR. JESS BIRD announces the removal of his office from Altus to 1545 N. W. 44th Street Oklahoma City.

DR. R. KEYES announces the removal of his office from Okemah to Wewoka.

DR. WILLIAM K. ISHMAEL announces his association with the McBride Clinic and Reconstruction Hospital, Oklahoma City. Dr. Ishmael is the Director of the Section on Internal Medicine, Arthritis and Rheumatic Diseases.

News of the County Medical Societies

HARMON County Medical Society met February 1st and elected Drs. Wm. G. Husband, president, and Russell H. Lynch, secretary. Both are of Hollis.

Drinker Respirator for Morningside Hospital

Morningside Hospital, Tulsa, was the recipient, February 8th, of a Drinker respirator, commonly known as an "iron lung." The instrument was a gift from Joe Carson Post, American Legion, and cost the local post \$1,400.00.

Tulsa now has two Drinker respirators, the first one a recent gift to St. John's Hospital. The Legion committee making the presentation to Morningside Hospital was headed by Robert Epstein; Dr. A. Ray Wiley of Tulsa was chairman of the doctor's committee.

These Drinker respirators are the only ones in Oklahoma at this date.

Association of Military Surgeons Appoints

The Association of Military Surgeons of the United States announces the appointment of Mr. Robert Lewin as director of its convention exhibits.

Mr. Lewin has very successfully directed the commercial exhibits of the American Association of Railway Surgeons and the American Association of Orthopaedic Surgeons for a number of years. This year he is also directing the commercial exhibit held in conjunction with the International Fever Therapy Conference at the Waldorf-Astoria, March 29, 30 and 31, 1937.

The commercial exhibits of the Association of Military Surgeons have been creating more attention each year and the exhibitors have found this to be a highly profitable meeting.

Anyone desiring information in connection with the Military Surgeons 1937 convention to be held at Los Angeles, October 14 to 16, the American Association of Orthopaedic Surgeons to be held at the Biltmore hotel, Los Angeles, January 15 to

19, the American Association of Railway Surgeons meeting to be held September 21 and 22 at the Palmer House in Chicago, or the International Fever Therapy Conference, as above mentioned, should address Mr. Robert Lewin, 505 North Michigan Avenue, Chicago, Ill.

Protamine Zinc Insulin Squibb

Physicians have been advised that Protamine Zinc Insulin, Squibb, is now available. The new form of treatment which this new preparation now makes possible has been declared the most notable advance in the treatment of diabetes since the discovery of insulin in 1921.

Protamine Zinc Insulin is slowly absorbed and the duration of action of a single dose is about three to six times that of unmodified insulin. For most patients, one injection a day is adequate. It is indicated chiefly in those diabetics particularly difficult to control with unmodified insulin because of the frequency of hypoglycemic reactions and the necessity for several daily injections of insulin. However, because it is slowly absorbed Protamine Zinc Insulin is NOT recommended in cases of diabetic coma, in diabetes complicated by infection or in the event of surgical operation.

Protamine Zinc Insulin, Squibb, is marketed under license from the Insulin Committee, University of Toronto. It is supplied in ten cc. vials ready for use. The preparation appears milky because the insulin is in suspension. Each cubic centimeter, after it has been brought into uniform suspension, contains forty units of insulin together with protamine and 0.08 mg. of zinc. It is stable in the cold for not less than six months and should not be used after the expiration date stamped on its wrapper. Protamine Zinc Insulin should be administered only subcutaneously.

It is the prediction of a renowned authority that as a result of the new treatment now available, severe diabetics will improve, the benefits of insulin therapy will be extended to larger numbers of mild diabetics, complications will be reduced and more lives of diabetics will be prolonged and maintained in comfort.

International Conference on Fever Therapy

In conjunction with the International Conference on Fever Therapy to be held at the Waldorf-Astoria hotel on March 29, 30 and 31, 1937, there will be a scientific and commercial exhibit staged.

The clinics will be held at the College of Physicians and Surgeons, Columbia University, New York City.

A large attendance of fever therapists from all over the world is expected. A very interesting and instructive program has been arranged and all of those who plan to attend the conference are urged to register promptly with the general secretary, Dr. William Bierman, 471 Park Avenue, New York City. The registration fee is \$15.00.

A Line to the Doctor's Wife

Luzier's, Inc., makers of fine cosmetics, make a logical plea for the patronage of "the doctor's wife" through page advertisements now appearing in The Journal. In the words of the manufacturers, "we offer you cosmetics of (1) unexcelled quality that (2) are selected to suit your requirements." And satisfaction is assured under a money-back guarantee. Feminine members of the doctor's household should be particular to obtain the best in cosmetics.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Ocular Signs of Thrombosis of the Intracranial Venous Sinuses. Frank B. Walsh, M.D., Baltimore. Archives of Ophthalmology, January, 1937.

Comment is made regarding the disagreement as to the cause or mechanics of producing ocular signs of the thrombosis. The pathology and anatomy of the structures is reviewed.

Clinical and autopsy findings at Johns Hopkins Hospital of septic thrombophlebitis of the cavernous and lateral sinuses supplied the source of the following observations.

Exophthalmos and chemosis were more often bilateral and the chemosis was proportionate to the exophthalmos.

Edema of the lids is due to the presence of an infection rather than an obstructed vascular system. In a fulminating thrombosis which usually occurs from an anterior infection, the edema is usually marked. The upper lid is usually swollen more than the lower lid. Infection of the antrum or ethmoid may also cause swelling of the lower lid.

Paralysis of the extra-ocular muscles on the affected side occurs early in fulminating thrombosis as does also ptosis. According to Parsons the first sign of involvement of the second eye is paralysis of its external rectus.

Paralysis of the sixth nerve may be accompanied by pain in the face and behind the eye which indicates fifth nerve complication. The sixth nerve paralysis indicates an extension of the infection by way of the inferior petrosal sinus. This refers to the lateral sinus thrombosis.

Nystagmus was not present in any of the author's cases.

Many times there is no corneal change, but increased sensitivity, anaesthesia, cloudiness and necrosis may be noted.

Ophthalmic signs of thrombosis of the cavernous sinus are engorgement of the veins and a low grade papilledema. Benedict noted the late appearance of these signs. They are of little aid in making the diagnosis.

It is hard to obtain a true record of visual acuity or the visual fields.

Six cases are reported with the clinical histories and autopsy notes. Necrosis of the hypophysis was present in five of these cases.

Primary thrombosis of the longitudinal sinus begins in the middle fifth. In chlorosis, and similar diseases of infants, the incidence is the greatest. If the obstruction is great, blood may appear in the spinal fluid. Cortical irritation may be present with Jacksonian convulsions. Motor involvement of the lower extremities may occur. Frequently there is a conjugate deviation of the eyes. Prognosis is very

poor if the infection is an extension from the lateral sinus. Doyle's description of this is given under three different subdivisions.

A discussion of papilledema in thrombosis of the lateral sinus is given. Dill and Crowe reported thirty cases; papilledema was present in twelve of the cases; in ten of the twelve it was bilateral. Bilateral papilledema occurs with increased intracranial pressure, it is pretty generally agreed.

Woodhall's recent investigations with the relationship between increased intracranial pressure and thrombosis of the intracranial venous sinuses is discussed. Possible reason for error in the Tobey-Ayer modification of the Queckenstedt test is given.

Masked Sinusitis as a Cause of Obscure Fever. Arthur R. Sohval, M.D., and Max L. Som, M.D., New York. Archives of Otolaryngology, January, 1937.

Nine cases are reported with fever from one week to two and one-half years duration; etiology unknown. Local symptoms were practically absent; constitutional symptoms were present, which tended to more diagnostic confusion. The ages of the patients varied from nine to forty-two years, with the majority in the early decades.

Some of the previous diagnoses on these patients were: infectious mononucleosis, rheumatic fever, bacterial invasion of the blood stream, subacute bacterial endocarditis, carbuncle of the kidney, epidemic encephalitis and endemic typhus fever.

Most confusing of the symptoms were chills, lymphadenopathy and splenomegaly.

The rhinologist must be particularly alert when examining a patient of this type for according to the author, many times the findings are practically nil. The usual signs and symptoms such as streaks of purulent secretion in the regions of the natural openings of the sinuses, tenderness in the region of the infected part and polypoid degeneration of the turbinates were seldom found in the cases reported.

Transillumination of the antrum is listed as a valuable aid to diagnosis but not entirely dependable.

Pathologic and roentgenologic findings do not always show a reciprocal relationship.

The author places his chief reliance for diagnosis on irrigation with a sterile, warm, saline solution. He likes a Yankauer cannula; preliminary cleansing is done with suction. Sometimes the exudate obtained is small in amount because the membrane has become so thickened that the capacity of the sinus is markedly reduced; the amount obtained depends also on the time when the irrigation is done.

Intranasal and roentgenographic examination and transillumination may be negative and irrigation yield quite a large quantity of pus. Staphylococcus aureus was the most frequent organism found on culture.

If repeated irrigations do not clear the antrum

of the infection, then an intranasal antotomy is done.

In ethinoiditis the author uses vasoconstricting nasal sprays and steam inhalations in treatment.

In all the cases reported, except one, headache was a symptom which the previous diagnosticians had regarded as accompanying the febrile state, rather than considering it as a symptom of a possible sinus infection.

An Unusual and Interesting Case Report, Ralph E. Russell, M.D., Ocala, Fla. The Eye, Ear, Nose and Throat Monthly, January, 1937.

A female, colored, age twenty. Married at age of fifteen; mother of three children—one born during the present illness; past history negative.

The illness started in the summer of 1932 with pain in the upper left teeth and swelling of the gums. Six months later there appeared a growing mass in this region and the pain stopped. For the next two and one-half years the mass continued to increase in size, despite various treatments. The author saw her at this time and found a pedunculated tumor originating in the left antrum. Photographs are shown of the growth at this time and again two months later, at time of operation, and also four months after operation. For two months previous to operation she was hardly able to take any nourishment and consequently was very emaciated. One week after her child was born, the growth was successfully removed. The pathologist reported a benign myxofibroma.

Bilateral Acute Mastoiditis with Many Complications—Recovery. C. A. Hutchinson, Bath. The Journal of Laryngology and Otology, January, 1937.

The unusualness of this case and the tremendous recuperative powers of a seriously sick child tend to make this a most interesting report.

A little girl, age six years and four months, when sent to a military hospital in the hills of India, had a high temperature for seven days. She had an acute mastoiditis of the right side and the face on that side was partially paralyzed.

A conservative mastoidectomy was performed; her temperature dropped but did not reach normal. On the tenth day when the author was called in consultation he found the patient with a swelling (abscess) in both forearms and mild chills. Her temperature was 99.6 degrees, pulse 124, operative wound apparently healing nicely, but no evident signs of intracranial complications.

The patient responded immediately to the advised treatment of a fluid diet, hot packs to forearms and injections of antistreptococcal serum, alternating with quinine given intramuscularly. Unfortunately these injections were discontinued, which resulted in the child's temperature fluctuating from 101.4 degrees to 104 degrees during the next ten days. A definite rigor also occurred. Since malaria was suspected by the local doctors, quinine by mouth was given, with little results, but the serum was not repeated.

The patient was removed to the author's care at Rawalpindi on the twenty-fifth day. After examination and radiograph it was considered advisable to reoperate the mastoid. The mastoidectomy wound was reopened. A perisinus abscess was found and drained. The newly found infected bone was removed. The sinus was opened, a thrombus removed, and curetted in both directions. Packings were placed in the lumen of the sinus.

Rectal saline with glucose and bicarbonate were

given. The report on the pus from the sinus read, "staphylococcus in pure culture." The wound was dressed for two days under gas.

On the thirtieth day meningitis symptoms appeared, while the paralysis of the face showed improvement. Lumbar punctures were performed. The abscess on the right forearm was lanced and drained. Seven days later the meningitis symptoms were much less and the facial paralysis much less evident. An abscess on each buttock, at the site of the quinine injections, was incised.

On the fortieth day a conservative mastoidectomy was performed on the left side and the pus from this showed "streptococci grown."

The patient began to improve. A slight congestion of the right lung cleared with the usual treatment.

The temperature started to swing again and new complications were feared. As no other signs could be found, the patient was treated as a malaria case.

On the seventieth day the paralysis of the right side had entirely gone, the right mastoidectomy wound nearly healed and the left mastoidectomy wound completely so, and hearing was good in both ears.

Dry-Ice (Carbon Dioxide Ice) Burn of the Throat. Dr. Philip S. Stout, Philadelphia. The Laryngoscope, December, 1936.

A white boy, fifteen years old, accidentally sucked a piece of dry ice into his throat. He immediately gagged and vomited the ice. He suffered great pain and burning in his throat. His face was red and swollen. The home remedy administered was olive oil, egg whites and milk which was swallowed with great difficulty. Later, When Dr. N. A. Karakashian saw him he found the pain much greater than the appearance of the throat warranted. The patient could not swallow his own saliva.

Three days later when the patient was referred to the author, he was still in pain, swallowing with great effort; his diet consisting of liquids and his face still somewhat swollen.

Examination showed no blebs, or blisters, but looked slightly mottled. The following day a direct laryngoscopic examination showed a slight pallor on the posterior wall down near the larynx. Sedatives were given to relieve the painful swallowing which lasted about a week. He finally recovered.

Carbon dioxide ice is used not only for cold packing but also in the manufacture of golf balls to freeze the core in the center of the ball. Five workers have filed claims alleging neuritis of arms and hands. Skin can easily be destroyed by this ice. Cancer has occurred in mice after applying CO₂ snow. It was used in treating skin cancer about twenty-five years ago.

So far a case similar to the above has not been found in the literature.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Tuberculosis of the Breast. By John L. Keeley, Madison, Wis. Annals of Surgery, February, 1937, Pages 169 to 177.

The researches of the author indicate that Sir Astley Cooper wrote about "scrofulous swelling of

the bosom" in 1829, the conclusion being that "this term was descriptive of the advanced type which was brought to the attention of the earlier clinicians and which was often associated with obvious tuberculosis in other organs."

Virchow was a skeptic about tuberculosis of the breast, but Lanceraux, in 1860, established its existence by microscopic study.

The incidence is not great—probably one per cent or two per cent of breast tumors.

"The cases are classified as primary or secondary."

The primary type is produced by direct entrance of tubercle bacilli through the broken skin covering of the breast. Reference is made to a report by Ely of a case where linen soiled by tuberculous sputum had been used as a covering for the breast.

The secondary type is produced by invasion by way of the lymphatics coming to the breast from a primary focus. The author doubts that there might be hematogenous invasion.

Many more cases are found in the female than in the male.

The larger number are between twenty and forty years of age.

It is believed that the doctrine of Rokitsky that tuberculosis and carcinoma do not co-exist in the same tissue has been disproved, the author citing several reports which apparently show such co-existence.

The lesion in tuberculosis of the breast is most often unilateral.

In most instances the discovery of a lump in the breast was the first indication of abnormality. Pain is not a common symptom.

The author speaks of a "nodular type" where the lesion "tends to remain localized," and of a "confluent type" where there is coalescence of more or less numerous foci. "The intraglandular cold abscess is a variation of the confluent type and represents a more effectively walled off process."

Without referring to type the author says: "The over-lying skin may resemble the orange peel change seen in carcinoma. It exhibits, first, the oedema and discoloration of lymph and venous stasis. Later, as sinus formation is imminent, redness and heat are added to the picture which is then more characteristic of inflammation."

As indicated by statistics, early invasion of lymph glands in axilla is demonstrable in about half the cases—probably more.

In connection with diagnosis, Morgen is quoted as follows: "The clinical findings are not always sufficient to aid the physician to make a correct diagnosis. A lump in the breast of long duration not associated with pain or retraction of the nipple but associated with glandular enlargement is very suggestive. If to this is added the presence of a fistula discharging a gritty caseous material one can fairly safely make the diagnosis of breast tuberculosis."

The treatment is surgical, and is listed as follows: (1) curettage of sinuses; (2) cauterization of sinuses; (3) excision of the tumor; (4) excision of the tumor and the breast; (5) excision of the axillary nodes; (6) excision of both the axillary nodes and the breast.

There is a detailed report of four cases, all in females, the pre-operative diagnoses being "chronic mastitis," "mammary tuberculosis," "carcinoma of the breast," and "adenofibroma of the breast."

The author concludes that tuberculosis of the breast is not as rare as it is thought to be; that it

occurs in many individuals who show no other tuberculous lesion; that the diagnosis is not often made before operation; and that recurrences after proper surgical operation are rare.

COMMENTS: Some years ago a woman about thirty-five years of age came to us with a note from her family physician and a telegraphic report that is not in existence now. The telegraphic report read "sarcoma."

The family physician wrote us that for some time there had been a swelling with a livid surface in front of the anterior axillary fold. It finally "broke through" and he had curetted it. The material was sent to the laboratory, and he had received the report indicated above.

LeRoy Long, Jr., was able to secure the slides. He did not believe it was sarcoma. The tissue was sent to another pathologist. He reported "tuberculosis."

In this case there was a sinus at about the upward outer extension of the breast. After a wide incision the defect was filled with a ten per cent suspension of iodoform in oil, followed by suture without drainage. There was rapid and permanent recovery.

As indicated, the lesion in the case of this patient was at the margin of the breast. In a case with more central involvement we would advise removal of the breast. LeRoy Long.

The Differential Diagnosis of Ectopic Gestation by Peritoneoscopy. By Robert B. Hope. Surgery, Gynecology and Obstetrics, February 1, 1937. Pages 229 to 235.

There is a brief discussion of the difficulties of diagnosis in ectopic gestation.

"Many cases of intra-uterine pregnancy that have been 'spotting' or bleeding, accompanied by some pain in the lower abdomen, have been subjected to a laparotomy because the physician felt that this was the safest procedure. It is in these particular instances that we feel peritoneoscopy is of value; for by this procedure we have a method of actually seeing the uterus, fallopian tubes, and ovaries. This procedure is done under local anesthesia and requires but twenty-four hours of hospitalization. Should the peritoneoscope determine that the patient has intra-uterine pregnancy, the danger of aborting is less likely than following a laparotomy. The patient may return home for expectant treatment, with a saving of several weeks of hospitalization for post-operative care and of much discomfort, as well as a saving of money. If, on the other hand, an ectopic gestation is seen, immediate laparotomy is done. Both the physician and patient are thus saved the time, worry, and possible risk of delay by incision."

The technique of peritoneoscopy is carefully given and ten case histories are presented to show the value of the procedure in this field.

COMMENTS: This is an interesting piece of work and deserves our consideration. However, there remains considerable question as to the practical adaptability of this procedure in ectopic gestation. Wendell Long.

Results with the Intra-Uterine Stem Pessary. By William H. Weir, Cleveland, Ohio. The American Journal of Obstetrics and Gynecology, February, 1937, Pages 291 to 300.

The author has written this paper because of the widespread opinion that a stem pessary is a very dangerous contrivance and quite likely to pro-

duce pelvic inflammation. He feels that most critics are without personal experience and are usually echoing tradition which has been handed down. It is his conviction that this is one of the older well tried methods and that it is too valuable to be discarded.

The rationale of the use of a stem pessary as considered by this author is well given in the following quotation:

"The purpose of the stem is to overcome a possible obstruction, first, by mechanically straightening out any flexion, and second, by maintaining the internal os and cervical canal somewhat dilated and patulous so long as the stem is worn, and to some extent this will usually be permanent.

"Its most important function is to stimulate the normal slow rhythmic contractions of the uterus, which induces a much better blood supply, the most rational treatment possible for a small, poorly developed muscular organ. That the uterus is constantly working to expel the stem is shown by the way a suture, used to hold certain varieties of pessaries in place, will gradually cut through a wide area of dense cervical tissue. The improved blood supply is evident from the increased menses which, in a few cases, may become too excessive."

The author gives as the ideal case for the use of a stem pessary the following:

"The ideal case for the use of a stem would be a young nulliparous woman with severe dysmenorrhea, or with scanty, delayed periods or even amenorrhea. Sterility in the married is also an indication. On examination she would show an undersized, movable, sharply anteflexed uterus with no suggestion of cervical or adnexal inflammation, and no history of previous pelvic inflammation. The age is important, for the younger the patient, the more likely is the uterus to resume its interrupted development. A rather similar anatomic condition may be found in hyperinvolution after delivery."

There then follows a discussion of the borderline situations in which the author feels that a stem pessary may satisfactorily and safely be employed. He does not allow rigidity to deter him in the use of stem pessary provided the genitals can be mobilized under an anesthetic and provided there is no definite evidence of infectious disease of the adnexa.

He warns against the use of a stem pessary as a contraceptive device because there are more satisfactory and less risky measures available.

The method of inserting the stem pessary is then thoroughly described, including the care of the patient at the time and afterward. He feels that it should be placed only under an anesthetic, following thorough mobilization of the genitals and dilatation of the cervix. The stem pessary should be about one-half inch shorter than the total length of the uterus. He feels that the stem pessary should be allowed to remain in place for at least six months.

The author reports his results by the use of a stem pessary, following dilatation and curetting, in three hundred and eighteen consecutive cases during fifteen years time prior to 1935. All were private patients and were under his personal care.

"In two hundred and thirty-four patients, the chief complaint was dysmenorrhea. Of these, one hundred and fifty-three, or sixty-five per cent, obtained practically complete relief; forty-six, or nineteen per cent, were partially relieved. In nineteen, or eight per cent, the relief was not realized fully till after the removal of the stem. No relief was obtained in sixteen, or 6.8 per cent. A number

of this last group had unusual complications such as uterine fibroids, cystic ovaries, etc.

"Sterility was complained of in 150 cases, usually with dysmenorrhea as well. Without a complete follow-up, forty-eight, or thirty-two per cent, are known to have become pregnant. It is impossible to say how much credit is due the stem in these cases, but I think it certainly helped.

"Marked irregularity of the periods, from every two weeks to every three months occurred in nineteen cases. Of this number, eleven had regular periods for as long as two years after operation.

"Seven patients had amenorrhea. One, aged twenty-two had never menstruated but became perfectly regular after the use of a stem. Five had periods of amenorrhea of three to six months and three of these became regular.

"A stem pessary has been used by me in a total of eight hundred and eighty-two cases, three hundred and eighteen of which are here reported. No examination of the records of the others has been made but I can recall but one serious complication, the development of pyosalpinx two months after the removal of the stem. Probably the stem was not responsible in this case."

COMMENTS: The author's enthusiasm for the use of the stem pessary would seem apparently far too extreme. However, his contention that it is a valuable method in selected instances and that it should not be entirely discarded is well founded.

Upon the basis of careful selection, this method will but infrequently be employed. However, because it has been found to be a dangerous and inadequate method in a multitude of conditions for which it was formerly used, I agree with the author that it should not be discarded in a very carefully selected group of patients. Wendell Long.

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.
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Tumors of the Hand. By Michael L. Mason, M.D., F.A.C.S., Chicago, Ill. Surgery, Gynecology and Obstetrics, February, 1937.

This very fine essay is in my judgment quite characteristic of the good work being done by the Drs. Kanavel, Koch and Mason. The author points out that the hand is the site of a great variety of tumors, many quite rare, some appearing almost exclusively on this extremity, and still others which are common to all regions of the body. He also points out that while most tumors of the hand are benign, there are a few of them which present simple therapeutic problems.

Some tumors require a long tedious dissection and the resulting defect left after removal often requires an extensive plastic operation consisting of a full thickness skin graft or pedunculated flaps.

1. **GANGLION:** The author points out that the site or occurrence of this tumor is: first, dorsal carpal region; second, volar surface of the wrist; third, dorsal surface of the fingers and finally within the substance of the tendons. The author prefers surgical removal of these tumors taking pains to remove the tissues from which the ganglion springs. He prefers a transverse incision for the removal of ganglia.

2. **EPIDERMOIDAL CYST:** The epidermoidal

or implantation cyst is most frequently found on the volar surface of the hand and fingers. The tumor is made up of a cavity filled with cholesterol and horny debris surrounding a wall of epithelium. It is believed that the tumor may be either congenital or traumatic. Treatment: complete excision.

3. **SEBACEOUS CYST:** True sebaceous cysts of the hand are quite rare and are probably in reality epidermoids.

4. **XANTHOMA:** The true nature of this tumor is not known. It is made up of variably sized lobules of yellow, orange, brown and gray tissue bound together by fibrous septa and surrounded by thin but definite capsule. Microscopically, the tumors contain four types of cells; giant cells of the epulis type containing from two to several hundred nuclei, spindle cells resembling fibroblasts, larger round cells, and finally the foamy cell, a larger polyhedral cell with one or two pyknotic nuclei and a pale vesicular cytoplasm.

Treatment: Complete surgical removal.

5. **FIBROMA:** These may be superficial, subcutaneous or deep.

6. **LIPOMAS:** Of the hand. These are not frequently found on the hand. They may be superficial or deep. They may produce symptoms according to their locality and size. They may be very easily removed or may be quite difficult if rather large and deeply situated.

7. **TELANGIECTATIC GRANULOMA:** The exact etiology is not known. It was formerly thought to be due to botryomycotic infection. It has marked tendency to hemorrhage and the granulomatous cap differentiates it from the ordinary nevus and angioma.

Treatment is complete removal.

8. **SUBUNGUAL TUMORS:** These are both benign and malignant. The subungual melanoma or the "melanotic whitlow" is one of the most frequent. About fifty per cent of the cases presented a history of injury six months to a year preceding the tumor. Others began as a mole which may remain unchanged for years and may without any evidence undergo malignant changes. Finally there is presented an ulcerating process which lifts up the skin and the nail and eventually replaces the nail bed with a black fungating ulcer. The best treatment is surgical removal and the removal of the axillary lymph glands. Some cases have survived as long as four years.

9. **SUBUNGUAL EXOSTOSIS:** Quite frequently are seen on the foot. It is rarely on the hand. Treatment is removal with the least damage to the nail bed.

10. **THE GLOMUS TUMOR:** It is being discovered that this is not a rare tumor at all. It develops from neurovascular glomus which is an arteriovenous anastomosis fairly well supplied with nerve fibers of the skin especially of the extremities. The tumor known as the glomus tumor is an enlargement of this structure and it is a question whether it is, in fact, a true neoplasm. Following trauma or more frequently without such a history, the patient complains of attacks of pain, confined at first to the finger or the finger tip, often without any evidence of trouble; finally a bluish fleck or nodule is noticed under the nail. At this stage pain tends to radiate up the arm.

Treatment: Removal of the tumor.

11. **METASTATIC TUMORS:** Of the nail bed are of great rarity. The author presents a picture of one, a chronic epithelioma in a male with a tumor of the testis.

12. **CARCINOMA:** Most frequently located on

the dorsum. The majority are squamous cell lesions. Most give some history of some irritative factor: exposure to irradiation, radium, sunlight, scars, chronic infection, chemicals, such as acids alkalis, tar, pitch, gas, grease paint, internal medication, etc.

Treatment: In the most cases local excision will suffice. In others, excision followed by skin graft and the more advanced, amputation with dissection of epitrochlear and axillary glands.

13. **CHONDROMA:** This tumor usually occurs on the shaft of the metacarpal or phalanx. The patient is usually under thirty years of age. The tumor is usually removed from the surrounding bone by curette. X-ray findings are quite definite and help to differentiate the tumor from the giant cell tumor. Likewise the x-ray differentiates bone cyst, sarcoma, metastatic carcinoma and myeloma.

Treatment: Consists of complete removal followed by cauterization of the cavity with Zenkers solution or fifty per cent zinc chloride.

14. **PERIOSTEAL TYPE OF CHONDROMA:** As the name implies this tumor is attached to the periosteum and may invade the cortex.

15. **GIANT CELL TUMOR:** This tumor is usually met with in the metacarpals. It may be confused with chondroma. X-ray easily distinguishes it from the enchondroma. The giant cell tumor has a peculiar soap-bubble appearance in that numerous trabeculae run through the tumor and divide it into many small translucent areas.

Treatment: Is that of chondroma.

16. **ANGIOMA:** Classification: Angio-blastic, telangiectatic, cavernous and vessel type. The treatment of each of these groups is discussed in detail.

17. **CONGENITAL LYMPHANGIECTASIS:** Treatment is quite unsatisfactory though the Kondoleon operations had been used with some success.

18. **TUMORS OF THE PERIPHERAL NERVES:** These tumors are not as rare as formerly supposed. They may assume many different forms. Care must be exercised in removing tumors of this type so as to preserve all other structures if possible.

Malignant tumors of the peripheral nerves must be removed widely. Amputation is not infrequently called for.

COMMENT: Anyone interested in surgery of the hand should read the above abstracted article. It is one of the finest and best written articles I have ever accounted.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

By Hugh Jeter, M.D., F.A.C.P., A.S.C.P.

The Problem of Rheumatism and Arthritis. Review of American and English Literature for 1935. (Third Rheumatism Review.) By Philip S. Hench, M.D., F.A.C.P., Rochester, Minn.; Walter Bauer, M.D., F.A.C.P., Boston; A. Almon Fletcher, M.D., Toronto; David Ghrist, M.D., F.A.C.P., Los Angeles; Francis Hall, M.D., F.A.C.P., Boston; and T. Preston White, M.D., Charlotte, N. C. *Annals of Internal Medicine*, Vol. 10, No. 6, December, 1936.

In this the authors have again reviewed the annual publication on all subjects relating to rheumatism and arthritis including six hundred articles

and seventeen text books. This is a brief but a very comprehensive review consisting of about 130 pages. Many interesting and very constructive comments are made by the authors.

The amount of material covered is indicative of the interest recent investigations have provoked in connection with the study of this very important and enormous field of medicine. There is evidence of a broadened view of the problem of rheumatism. It is suggested that the general practitioner is becoming increasingly aroused by the various methods of study and treatment of forms of rheumatism.

It is impossible to summarize herein this entire article, but the following classifications which the committee on arthritis is using, will serve as a helpful working basis for study and will also indicate the enormous amount of material reviewed in this article, and in so doing supply the readers with a reference to a complete review as well as the entire bibliographic material appended.

OUTLINE OF CONTENTS

Introductory.

General incidence and occupational distribution.

Classification of diseases of joints and related structures.

Diseases of articular and peri-articular tissues related to trauma.

Diseases of joints due to infection of known type.

Gonorrheal arthritis and tenosynovitis.

Tuberculous arthritis.

"Tuberculous rheumatism."

Pneumococcal arthritis.

Syphilitic arthritis and Charcot's disease of joints.

Undulant fever.

Purulent arthritis.

Typhoidal arthritis and spondylitis.

Arthritis with chronic ulcerative colitis.

Rheumatic fever.

Sydenham's chorea.

Chronic arthritis.

Introductory; incidence.

General remarks on etiology.

The two great types—relationship and differentiation.

1. Atrophic arthritis.

2. Hypertrophic arthritis.

3. Backache, spondylitis, and sciatica.

Intervertebral disks and vertebral joints;
"newer anatomy and pathology."

Atrophic spondylitis.

Hypertrophic spondylitis.

Gout and gouty arthritis.

Cinchophen toxicity.

The uric acid problem.

Psoriatic arthritis.

Hemophilic arthritis.

"Allergic," "metabolic," and "endocrine arthritis."

Miscellaneous types of joint disease.

Diseases of muscles, fibrous tissue, and bursae.

Miscellaneous conditions.

Physiology of articular tissues.

The classification adopted by the Subcommittee on Nomenclature of the British Committee on Chronic Rheumatism is also given in this article and seems to warrant repetition in this abstract.

Group 1. Rheumatic fever, acute (Syn.: "Acute Rheumatism") or subacute.

Group 2. Acute gout.

Group 3. Chronic arthritis.

A. Rheumatoid type ("atrophic; proliferative").

1. Specific causation. Known etiology.

(1) Gonococcal arthritis.

(2) Tuberculous arthritis.

(3) Syphilitic arthritis.

(4) Arthritis following other specific infections such as dysentery, scarlet fever, rheumatic fever.

2. Nonspecific causation. Unknown etiology.

(1) With known associated factors.

a. Metastatic or "focal" arthritis, including so-called "multiple infective arthritis."

b. Associated with disordered metabolism (e. g., gout).

c. Climatic arthritis (villous type).

(2) With no known associated factors.

a. Classical type of rheumatoid arthritis of women, usually of child-bearing period.

b. Rheumatoid arthritis in children, including Still's disease. The term "rheumatoid arthritis," when utilized, should be confined to the above two conditions, all other forms being designated "rheumatoid type."

B. Osteo-arthritis type ("hypertrophic;" "degenerative.")

1. Known etiology.

(1) Secondary to trauma.

(2) Secondary to arthritis of rheumatoid type.

(3) Associated with disordered metabolism (climatic, gout, scurvy, hemophilia).

(4) Associated with organic disease of the nervous system (e. g., Charcot's joints and syringomyelia).

2. Unknown etiology.

So-called "senile variety" (e. g., morbus coxae senilis).

Group 4. Non-articular rheumatic affections.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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Dislocation and Elongation of the Long Head of the Biceps Brachii. An Analysis of Six Cases. Edgar Lorrington Gilcreest. *Annals of Surgery*, CIV, 118, July, 1936.

When the tendon slips from its groove over the lesser tuberosity the tension of the biceps is lessened and the tendon becomes relaxed, producing the classical bicipital syndrome. The dislocation may be acute, recurrent, or gradual; in the first two types the disability is rapidly disabling. The mechanism of production is brought about by force applied by the arm in external rotation and abduction of ninety degrees or more. The tendon may be palpated outside the groove, or the empty groove may be demonstrated.

In recurrent dislocation one can at times reproduce the dislocation by having the patient hold a five-pound weight in the hand with the arm in overhead extension and external rotation. As the arm is adducted, the examiner feels with his fingers a definite snap at the top of the shoulder and along the belly of the biceps as one hundred and ten to ninety degrees of abduction is reached, and the patient experiences a sharp pain in the region of the bicipital groove.

Reduction may frequently be accomplished early by flexion at the elbow to ninety degrees, with the hand in supination; the arm is then abducted to ninety degrees in the coronal plane in internal rotation.

If the patient is seen late, or if there is recurrence, open operation is recommended, with high severance of the tendon and suture to the coracoid process and to the tendon of the short head.

There is an anatomical consideration, an extensive bibliography, and an appendix. Six cases are analyzed.

Spondylolisthesis: With a Description of a New Method of Operative Treatment and Notes of Ten Cases. Walter Mercer. *Edinburg Medical Journal*. XLIII, 545, September, 1936.

Mercer believes that in all cases of spondylolisthesis there is a bilateral primary center of ossification in the posterior half of the fifth lumbar vertebra. These usually unite in the region of the isthmus about the eleventh year. Due to trauma or to severe strain, there is a slipping of the epiphysis either with widening of the anteroposterior diameter without separation, or with actual separation at the isthmus, a prespondylolisthetic state. Mechanical factors, including the shearing action of the upper posterior sacrum on the isthmus, then come into play, tending toward gradual stretching of the soft structures and production of spondylolisthesis. The typical clinical syndrome is described. Points to be noted in the anteroposterior roentgenogram are: (1) a characteristic arc or bow which is the outline of the front of the upper part of the body and transverse process; (2) a bitrochanteric length less than the bicristal length; and (3) an upward tilting of the lamina and spinous process of the fifth lumbar vertebra, which casts an inverted Y-shaped shadow. In the lateral roentgenogram, forward displacement, increase in the anteroposterior diameter of the vertebrae, Ullman's sign of forward displacement, and a gap in continuity of the vertebra should be looked for. Displacement forward is graded by the method of Myerding.

The author reviews the operative methods and presents a new technic in which the anterior approach is used. The intervertebral disc between the fifth lumbar vertebra and the sacrum is resected together with a small part of the lower fifth lumbar vertebra. A wedge of bone from the iliac crest is inserted in the gap and is transfixed by screws slanting obliquely downward through the fifth lumbar vertebra. Of the ten patients whose cases are reported, two were operated upon by the author's method. One died post-operatively, due to superior mesenteric thrombosis; the second became pain-free and had full function with the exception of a stiff lower lumbar region.

Tuberculosis of the Spine with Paraplegia. J. H. Kite. *Southern Medical Journal*, XXIX, 883, September, 1936.

The history of this condition is touched upon. Twenty cases with paralysis and ninety-six cases

without paralysis from the Scottish Rite Hospital for Crippled Children, Decatur, Georgia, are studied. Carefully prepared tables show the age incidence, location of lesions, number of vertebrae involved, duration of disease before onset of paralysis, treatment, time required for recovery, and the results. A significant finding is that the region most frequently involved in the paralyzed group was from the fifth to the ninth thoracic vertebra, while the region most frequently involved in the non-paralyzed group was from the ninth thoracic to the second lumbar vertebra. "Paralysis is seldom due to bony pressure at the point of angulation, but is due to pressure on the cord from the products of tuberculous inflammation. . . . If the paraplegia occurs shortly after the onset of the tuberculous lesion in the spine, the prognosis is good. If it comes on late, five years or more after onset of the disease, the prognosis is poor." Younger children recover better than the older ones.

Patients receiving adequate treatment early after the onset of paralysis recover better than those who are treated later. Laminectomy in this series did not hasten recovery. The author states that when paralysis has disappeared a spine fusion should be done to cure the tuberculous bone lesions.

This article is a valuable contribution to our knowledge of paraplegia as a result of tuberculosis of the spine.

Committee on Air Conditioning

The Committee on Air Conditioning, appointed by the Board of Trustees, including Dr. Carey P. McCord, Prof. C. P. Yaglou, Dr. Emery Hayhurst, Dr. Henry Williams and Dr. William F. Petersen, held a meeting at the headquarters office of the American Medical Association on November 6 for the purpose of organization and to outline a program of study and investigation. This is a committee of the House of Delegates and will render its report to the House at the next Annual Session. —*Journal A. M. A.*, January 2, 1937.

The Effect of Benzedrine Sulfate on Intelligence Scores

Sargent and Blackburn (*Lancet*, London, December 12, 1936), conducted an investigation to determine whether the increased confidence and mental alertness reported after the use of 'Benzedrine Sulfate' (benzyl methyl carbinamine sulfate) would be accompanied by any real improvement in general mental efficiency as shown by psychometric tests.

After administration of 20 mg. of 'Benzedrine Sulfate,' Cattell's "intelligence tests" were given. The results showed an increase in score of over eight per cent as compared with previous tests without 'Benzedrine.' The score of a control group receiving placebos remain unchanged.

Individual examinations showed that 'Benzedrine' has more effect on mildly depressed cases than on schizophrenics where personality changes are more profound. Even better results might have been obtained if the dosage had been graded to each patient's requirements.

The authors suggest that the drug may prove useful in certain cases where mental efficiency is temporarily impaired by emotion, anxiety or mild depression.

Studies in Splenopathy: Introduction

Allen O. Whipple, New York (*Journal A. M. A.*, November 28, 1936), describes the function of the Combined Clinic in Splenopathy of the Vanderbilt Clinic and the Presbyterian Hospital since its inception six years ago. They now have studied and

are seeing in their follow-up some two hundred patients with lesions of the spleen. From the standpoint of the care of the patient, teaching and research—the three cardinal criteria of any clinic worthy of the name—the Combined Clinic has everything to recommend it. The patients get more careful study and discriminating opinion as to therapy, because it is the result of agreement among medical and surgical workers, based on mutual follow-up studies. Over-conservatism or radicalism in therapy cannot dominate such a clinic.

Fracture of Neck of Femur: Evaluation of Various Methods Advanced for Treatment

Paul B. Magnuson, Chicago (Journal A. M. A., October 31, 1936), believes that roentgen evidence of reduction in fracture of the neck of the femur can often be misleading if the roentgenogram is taken only at two angles; therefore, roentgenograms at a number of angles should constitute a routine both before and after reduction. If there is any considerable obliquity of the fracture line, visual reduction is preferable, with fixation applied while the fracture is in view. There should be a classification of fracture of the surgical neck as to the line and plane of the fracture; in addition to this, a classification of the fracture as to the amount of displacement occurring immediately after the injury in order to determine whether certain lines and planes of fracture interfere with the circulation more than certain other lines and planes of fracture. The amount of displacement would indicate the amount of tearing of the visceral capsule that might be present, thereby indicating whether this factor should be taken into consideration in making a prognosis. The patient's physical condition, age and weight should be considered before any method of treatment is decided on, and, whatever method is used, anatomic reduction should obtain and the method applied that will maintain the fracture in this position while healing. Of the closed methods, Whitman, Leadbetter-Whitman, and well leg traction have their place in the field of treatment of fracture of the neck of the femur, but from present information, mechanical fixation with three-flange nails, steel pins or bone grafts offer greater comfort to the patient, greater chance of bony union, easier nursing, and less disability following union so far as the joints of the leg are concerned, than any of the closed methods. Regardless of what method is used for maintaining position, close bony contact, anatomic apposition and absolute fixation are the three prime factors in securing better results in fractures of the neck of the femur.

Successful Treatment of Essential Thrombopenia With Hemorrhage by Roentgen Rays

Hillyer Rudisill, Jr., Charleston, S. C. (Journal A. M. A., December 26, 1936), reports that he and his associates have successfully treated seven cases of purpuric and non-purpuric thrombopenia with hemorrhage by irradiation of the spleen with x-rays. The eighth case, which was complicated with acute myeloid leukemia, terminated unfavorably. In spite of the smallness of the series, the author believes that uncomplicated thrombopenia with hemorrhage should be divided into two distinctly different classes; cases of unknown etiology and others from various toxemias. For convenience he has termed these respectively as cases with an excessive S factor (overdestruction of platelets by the spleen) and the others of C factor type (toxic destruction of platelets in the circulation). This division is important from the standpoint of radiation treatment. In the C factor type the spleen's

normal function needs only to be lowered until the toxemia is overcome, and from one to three roentgen treatments will usually accomplish this. In the S factor type, unless the patient responds partially to other forms of therapy also it may be occasionally necessary to render the spleen permanently functionless by intensive irradiation. The following were used in all of the treatments: voltage, 200 kilovolt peak; tube current, 4 milliamperes; filter, 0.5 mm. of copper plus 1 mm. of aluminum; roentgens per treatment, 200 measured in air; roentgens per minute, 10; area exposed, anteriorly over the spleen; size of field, 20 cm. circular. The author concludes that roentgen radiation constitutes an exceedingly valuable and possibly a specific therapeutic agent when applied over the spleen in primary or uncomplicated thrombopenia with hemorrhage either with or without purpuric skin manifestations.

Committee on Cosmetic Advertising

By special action of the Board of Trustees an Advisory Committee on Advertising of Cosmetics has been established to aid in determining allowable claims for cosmetic preparations and to advise with the editorial department of the Association in the acceptance of cosmetic advertising. The committee as established includes Dr. Francis E. Senear, Chicago; Joseph J. Eller, New York; C. Guy Lane, Boston; Paul N. Leech, director of the Division of Foods, Drugs and Physical Therapy, and Dr. Morris Fishbein. A preliminary meeting of the committee was held in New York on December 14 at which plans were developed for the routine conduct of this work.—Journal A. M. A., January 9, 1937.

Vitamin Advertising and the Mead Johnson Policy

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a controlling agent in the use of vitamin products.

Mead Johnson & Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

Grants for Research: Applications Invited for Aid in Research on Clinical Problems

The Committee on Scientific Research of the American Medical Association invites applications for grants of money to aid in research on problems bearing more or less directly on clinical medicine. Preference is given to requests for moderate amounts to meet specific needs. For application forms and further information, address the committee at 535 North Dearborn Street, Chicago.—Journal A. M. A., January 2, 1937.

Committee on Asphyxia

Pursuant to the action of the House of Delegates at the 1936 annual session in Kansas City, the Board of Trustees has appointed a Committee on Asphyxia including Paluel J. Flagg, New York, chairman; John S. Lundy, Rochester, Minn., and Thomas J. Vischer, Germantown, Philadelphia. The committee held a preliminary meeting for the organization and for an outlining of its activities in the headquarters office of the Association on December 5. As the work progresses, further announcements will be made.—Journal A. M. A., January 9, 1937.

OFFICERS OKLAHOMA STATE MEDICAL ASSOCIATION

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Meeting Place, Tulsa, May 10, 11, 12, 1937.

Delegates to the A. M. A., Dr. McLain Rogers, Clinton, 1936-1937; Dr. W. Albert Cook, Tulsa, 1937-1938; Dr. Horace Reed, Oklahoma City, 1937-1938.

SPECIAL COMMITTEES, 1936-1937

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Post Graduate Medical Teaching: Dr. Henry H. Turner, Chairman, 1200 North Walker, Oklahoma City; Dr. H. C. Weber, Bartlesville; Dr. Walter Hardy, Ardmore.

Study and Control of Cancer: Dr. Wendell Long, Chairman, Medical Arts Building, Oklahoma City; Dr. E. S. Lain, Medical Arts Building, Oklahoma City; Dr. Paul Champlin, Enid.

Study and Control of Tuberculosis: Dr. Carl Puckett, Chairman, 22 West Sixth, Oklahoma City; Dr. F. S. Etter, Bartlesville; Dr. F. P. Baker, Tahliha.

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THE JOURNAL

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Pulmonary Heart Disease

HOMER A. RUPRECHT, M.D.
TULSA

This syndrome is one of the less common, yet by no means rare, forms of heart disease which has not attracted the attention it deserves, and whose diagnosis is often missed. Under the term "pulmonary heart disease" are included a host of conditions varying widely in etiology and pathology but having in common the fact that they place a burden on the lesser or pulmonary circulation. The pulmonary circulation consists of right auricle, right ventricle, the pulmonary artery and its branches down through the lung capillaries and then back through the pulmonary veins to the left auricle. Lesions capable of throwing a strain on the right heart may be found at almost any point within this system. It follows, therefore, that pulmonary heart disease must be regarded as a symptom complex rather than as a disease entity. As a matter of fact, the separate entities were recognized long before any attempt was made to combine them on a common physiological basis.

Ayerza's disease is a name that has been given to one group of these cases characterized by sclerosis of the pulmonary artery, and was originally thought to be due to syphilis. Ayerza's original conceptions have been pretty well refuted, and the term is rarely used in this country; but it has served a useful purpose in stimulating interest in this group of conditions.

Cor pulmonale is another widely used term and is synonymous with pulmonary heart disease. Moschowitz uses the term "hypertension of the lesser circulation."

"Emphysema heart" is another widely used term but obviously has a narrower application. However regardless of the term which we use, our conception of the condition is that it is the result of some lesion which throws an increased demand for work on the right ventricle.

ETIOLOGY

Among the conditions capable of producing this symptom complex are chronic pulmonary emphysema, mitral stenosis and insufficiency, pulmonary tuberculosis, bronchiectasis, the pneumokonioses, chronic indurative pneumonitis, syphilitic aneurysm, chronic obliterative pleurisy, lung tumors, asthma, congenital heart disease, stenosis of the pulmonary artery, and deformities of the chest and spine.

In addition to the above causes which are chronic in character and as a result of their chronicity throw a strain on the right heart producing hypertrophy and dilatation, there is another group which is less well recognized and which may suddenly throw an overpowering load on the right heart, thereby causing acute pulmonary congestion. Clinically this is recognized as acute pulmonary edema and is seen in pulmonary embolism when the lung field is suddenly and markedly reduced, in the presence of hypertensive or rheumatic disease following some unusual stress, or even in normal hearts following severe unaccustomed exertion.

PATHOLOGICAL PHYSIOLOGY

Somewhere between the pulmonic and mitral orifices there is an obstruction to

the flow of blood. This raises the pulmonic blood pressure behind the obstruction and increases the work required of the right ventricle. As a result the right ventricle undergoes dilatation and hypertrophy. Simultaneously, as a result of the increased pulmonic blood pressure, there is more or less passive congestion in the lungs with a consequent deficient aeration and cyanosis. If the anoxemia is of long duration it may be followed by a compensatory or symptomatic polycythemia. At this stage the heart may be said to have compensated for the handicap placed upon it. However, the right heart is fundamentally a weaker muscle than the left ventricle and therefore its ability to compensate is less and the margin of safety correspondingly smaller. If the condition becomes worse the cyanosis and passive congestion increase, the right heart becomes insufficient and we have added an enlarged liver, markedly distended systemic veins, and edema and ascites. At times the latter reach massive proportions. Terminally there is usually a marked pulmonary edema.

In many cases the red cell count and the hemoglobin are normal, in some there is an anemia due to the associated pathological conditions. Where a polycythemia is present it is usually moderate with a red cell count between five and six million and a hemoglobin between one hundred and one hundred ten per cent. However, in exceptional cases both figures may be quite high although they rarely reach the levels seen in polycythemia vera. The highest figures in my group of cases were eight million erythrocytes and one hundred forty-eight per cent hemoglobin.

In the later stages cyanosis is invariably present and at times may be intense. I know of no other condition which may present as marked a degree of cyanosis. The appearance of these patients may be similar to certain of the aniline poisonings. In the latter, however, we are dealing with a methemoglobinemia rather than an anoxemia.

Because of the pulmonary congestion the vital capacity in pulmonary heart disease undergoes an early and marked reduction and is frequently seen in the neighborhood of one thousand to one

thousand two hundred and not infrequently even goes below one thousand.

PATHOLOGY

With regard to the heart itself the pathology of pulmonary heart disease is quite simple. It consists essentially of dilatation and hypertrophy of the right ventricle and auricle. The capacity of the right ventricle to hypertrophy is limited and the weight of the heart is never very great. Only rarely does the thickness of the hypertrophied right ventricle exceed that of the normal left. Pulmonary heart disease occurs most commonly in the fifth, sixth, and fourth decades in the order given and therefore coincides roughly with those age groups in which vascular disease is most apt to occur. Consequently, we often find it combined with other types of heart disease notably hypertensive and coronary disease. In such cases it may be difficult or impossible to correctly evaluate the various factors. Frequently our honest clinical diagnosis must be heart disease of unknown etiology and it is only at autopsy that its true nature is learned. On the other hand the diagnosis is missed only too often because its possibility is not kept in mind.

The pathology of the circulatory changes consequent upon right-sided failure is similar to that of heart disease in general except that the pulmonary congestion is apt to be more marked.

The pathology of the causes of pulmonary heart disease is quite varied and will be briefly outlined.

Congenital heart disease produces this syndrome in three principal ways; pulmonic stenosis, patent ductus arteriosus, and patent interventricular septum. In the last two conditions the blood is shunted from the higher pressured systemic circulation to the lower pressured pulmonic circulation thereby increasing the pressure within the latter and forcing the right heart to do an increased amount of work.

In chronic pulmonary emphysema there is a reduction in the capillary bed of the lungs thus raising the peripheral resistance and increasing the load on the right ventricle. If we exclude mitral disease, chronic pulmonary emphysema is by far the most common cause of pulmonary heart disease in the northern part of the

United States. Because of the milder climate it is seldom seen here in Oklahoma. Characteristically such a patient is of the pyknic type, short, powerfully built, short neck, heavy shoulder muscles, and a barrel-shaped chest. The cyanosis is well marked. His respirations are rapid and shallow. Expiration is active and there is an audible expiratory wheeze. The neck veins are markedly distended. The liver is well down below the costal margin. There may be some abdominal ascites and dependent edema. Examination of the heart is unsatisfactory. No activity can be felt. The lungs are hyper-resonant and the heart borders cannot be outlined. The heart sounds are distant and no murmurs are heard. The lung bases descend very little with inspiration. The costal margins move inward with each inspiration. Auscultation reveals a marked expiratory wheeze throughout both lungs. There are numerous crackling rales at both bases. These patients carry a high alveolar CO_2 with a compensated carbon dioxide acidosis. Consequently their CO_2 combining power is high. This is of significance because with their lowered capacity for minute volume exchange they cannot increase their ventilation as other cardiacs do but are forced to compensate by an increase in plasma carbonate. However, when they reach the upper limit of their ability to compensate they have no further recourse and will break very suddenly. In as much as the heart rarely gives symptoms until the limit of this compensation has been reached they rarely live long after cardiac failure has once set in.

In mitral disease the back pressure in the pulmonary circulation increases thus adding to the work of the right side of the heart. In pure mitral stenosis uncomplicated by insufficiency one often finds the hypertrophy and dilatation confined entirely to the right side.

Chronic pulmonary tuberculosis, bronchiectasis, pneumokoniosis, and chronic fibroid pneumonitis all act similarly by reducing the capillary bed of the lungs by means of diffuse fibroid changes. In these conditions it is obvious that the lesions must be generalized throughout both lungs in order to hamper the work of the heart. In the tuberculosis wards one frequently encounters cases of extensive fibroid dis-

ease who are sitting up in bed short of breath, possibly slightly cyanotic, with rapid pulse and a normal temperature. The liver is enlarged and tender and may be palpated well below the costal margin. There is slight pitting edema of the lower extremities. These are cases of pulmonary heart disease and yet they are rarely recognized as patients suffering from heart disease. Or the converse may be true. They may be recognized as cardiacs but because they are afebrile the underlying lung pathology may pass unnoticed until it is accidentally discovered at autopsy.

Occasionally a syphilitic aneurysm will produce this syndrome either by rupturing into the pulmonary artery or right ventricle or as in one case which I have seen by compressing the pulmonary artery.

Chronic obliterative pleurisy is not infrequently the only pathological lesion found associated with a cor pulmonale. The frequency of its occurrence would seem to show that it has a causal relation but I do not know the explanation.

Deforming bone disease of the spine and thoracic cage is also an occasional cause. The supposed explanation is that a kinking of the pulmonary vessels occurs.

Asthma occasionally produces right heart disease although rarely of the chronic type. It is more likely to cause acute failure with complete recovery as the asthmatic attack subsides. It acts presumably by increasing the intra-pleural pressure and thereby indirectly raising the pressure in the lesser circulation.

Occasionally a case is seen where there are no demonstrable pathological findings except arteriosclerosis of the pulmonary artery and its branches. Whether this is primary or secondary to an increased pressure in the pulmonic circulation is not known. Some observers believe that there is a primary idiopathic hypertension of the lesser circulation analogous but not related to ordinary arterial hypertension.

SUBJECTIVE SYMPTOMS

The symptoms presented by right-sided heart disease are similar to those of congestive failure in general. Those differences which do exist are quantitative rather than qualitative. Shortness of

breath is apt to be more marked and to occur earlier. Cyanosis is more constant and more marked. Edema and ascites are similar in both conditions. Because of the pulmonary hypertension and congestion hemoptysis is common—perhaps the most marked differential symptom. Cough, like shortness of breath, is likely to be more pronounced and to occur earlier. In addition to those symptoms directly referable to the heart we find, of course, a wide variety which are due to the underlying causative factor.

OBJECTIVE FINDINGS

Examination of the heart which is the seat of pulmonary heart disease usually reveals nothing startling. Rarely do we find an increase in the visible activity. Palpation may reveal increased activity over the right ventricle. Ventricular activity may be felt to the right of the sternum. If there is enlargement to percussion it is usually to the right and rarely marked. No significant murmurs are heard unless congenital or rheumatic heart disease is present. The pulmonic closure may be more marked than the aortic. Often physical examination reveals no abnormalities in the heart itself and our diagnosis must be an inferential one, reasoning from evidences of right-sided failure to a cause capable of producing that failure. Physical examination may, of course, reveal the underlying cause. It will bring out evidence of failure such as hyperpnea, cyanosis, ascites and edema. In severe cases of long standing one usually finds clubbing of the fingers and toes. This is the so-called pulmonary osteo-arthritis. At times this may develop very acutely.

X-ray studies may reveal an enlargement of the right ventricle. Their greatest usefulness, however, lies in the information which they give us regarding the underlying lung disease.

The electrocardiogram shows right axis deviation in a considerable percentage of cases. T wave changes are frequently seen. Auricular fibrillation is not uncommon. Low voltage and bundle branch block are less common findings.

PROGNOSIS

The prognosis depends in large part upon the underlying cause. If it can be

satisfactorily treated the prognosis should be good. Unfortunately in the majority of these cases by the time the cardiac condition has become manifest there is little or nothing that can be done for the lung disease. After cardiac decompensation has once set in the prognosis is poor.

TREATMENT

The treatment is that of heart disease in general plus any special measures which may be directed at the cause. Oxygen and venesection are especially important because of the tendency toward cyanosis and pulmonary congestion. Venesection is at times a life-saving procedure.

* * *

DISCUSSION

Dr. C. J. Fishman, Oklahoma City:

The expression of right heart failure as compared with left heart failure has always been in papers either directly or indirectly, of piling up of the circulation of the heart. Whether or not to separate it into two types of heart failure from the practical point of view is questionable, inasmuch as you have just heard that the prognosis when the diagnosis is very unsatisfactory. The frequency with which right heart failure occurs in the pulmonary process which is responsible and the etiological factors for this type of heart disease will lead us to be on guard and give us a clue to prevention. I think one of the most important points Dr. Ruprecht brought out was the last statement—venesection as an important measure of relief for this type of cardiac failure and should be remembered in most types of cardiac failure in which marked respiratory difficulty and marked dyspnea are outstanding features after comparison of physical findings in the heart. Years ago venesection was a measure which was useful in a large number of conditions. It was an important method which was used in many conditions which are now considered harmful, but in cardiac failure and particularly that type with shortness of breath and marked dyspnea that occur when there is failure of the right side of the heart, is a clear cut occasion for venesection, not a few ounces but as large a quantity as the patient can stand, at least one pint, with gratifying relief on the part

of the patient and those associated with him.

Dr. Paul White:

In an article it claimed not to be able to differentiate between acute and coronary thrombosis and acute pulmonary thrombosis. In coronary episodes that have pericardial friction, they do not have coronary friction as they do in others. They have acute cyanotic condition, pasty color. In the clinical pictures the dilatation of the veins is practically always noted in these cases of coronary episode. The electrocardiographs have not altogether been consistent. The acute episodes clear up more quickly than the coronary episodes. There is a very interesting article of the

distressed heart in a very recent number of the A. M. A.

Dr. Ruprecht:

Frequently cases are progressing along and then will suddenly collapse, have pulmonary edema and are rushed to the hospital. These patients will be unconscious, moribund and the sudden removal of a large amount of blood will frequently, almost usually, be a life-saving procedure. Venesection is a question of slashing down of a large vein and allowing blood to run out. Operative technic may be gotten to later. A good many lives can be saved if this one particular procedure is kept in mind and action must be prompt or not at all.

The Importance of Fields of Vision*

F. M. COOPER, M.D.
OKLAHOMA CITY

In taking up this subject I feel that it is one which the average physician instinctively dislikes inasmuch as taking a field is time consuming and tedious and he makes as few as his conscience permits. However, we gain information in this manner for diagnosis and prognosis which cannot be obtained by any other means.

There are three main methods of taking fields; the hand method, the perimeter, and the campimeter or tangent screen.

The hand method is that in which the patient faces the physician at arm's length and fixes the physician's eye, while the physician moves his hand, or a piece of white paper or cotton, or a small light, in the field midway between the two and uses his own field as a comparison. This is a very crude but quite useful method. It shows up marked degrees of contraction or hemianopsias which can later be more accurately measured. It can be used at the bedside, for children whose attention wanders quickly, for light projection in cataracts, or as a quick routine office procedure following each refraction.

The perimeter has been highly refined by Ferree-Rand, the value of whose instrument is enhanced by their lighting system making it possible to repeat examinations with the same degree of illumination at each sitting. However, it seems to the writer that except in exceptional cases careful use of any perimeter will give the busy practitioner enough information for his purpose. He should remember that fields vary with intensity of illumination and endeavor to take each field under as similar conditions as possible, preferably using artificial light only. The perimeter is primarily suitable for the peripheral field or that portion which lies beyond the thirty-five degree or forty-five degree radius.

Inside of the thirty-five degree or forty-five degree radius the tangent screen or campimeter is much more elastic. It is the instrument of choice for outlining central defects.

In taking the field of vision, therefore, the patient is first seated at the perimeter and the field outlined. Since the sensitivity of the peripheral portion of the retina is much less than that of the central por-

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

tion a comparatively large stimulus is used, usually a five mm. or ten mm. object. The blue, red and green stimuli are next used and charted. Then the patient is seated before a tangent screen or a campimeter. The campimeter is handier for routine work than the tangent screen. With a one and one-half mm. or two mm. test object the blind spot is charted and a search for scotomata made. If the blind spot is enlarged or scotomata found, more accurate findings can be obtained by using the tangent screen at one meter and a three mm. object. Best results are obtained by placing the object in the scotoma and drawing it out until seen rather than from the visible to the invisible area. Next the green, red and blue outlines are obtained around the scotoma. Relative scotomata in which the object is seen but indistinctly are mapped. Also a search is made for areas in which color perception is absent but white is present.

It is unnecessary in this brief paper to do more than mention a few of the anatomical relations concerned in interpreting the perimetric findings. The nerve fibres of the retina on the nasal side spread out peripherally from the disc but temporally there are a large number going directly to the macula with the rest bending around the macula to reach the periphery and transversing a much greater area. These fibres are consequently more apt to be affected by local diseases along their course than the shorter ones. Moreover they are arranged in bundles. The papillo macular bundle forms roughly one-fourth of the nerve. At the papilla where it leaves the nerve it is located externally nearest the macula but throughout most of the nerve it occupies a central position. The external fibres of the nerve supply the retina adjacent to the nerve head. Seven-tenths of the optic nerve lie in the orbit, three tenths in the optic foramen, and inside the skull. At the chiasm two-thirds of the fibres cross, thus each nerve supplies the temporal field of the opposite eye and the nasal field of the corresponding eye. The chiasm lies slightly above the groove of the sphenoid bone. Posterior to and beneath it is the sella tursica in which lies the pituitary body. Directly in the posterior angle of the chiasm is the infundibulum or process which connects the

pituitary with the brain. Directly over the chiasm is the anterior tip of the third ventricle and to either side are the internal carotid arteries. From the chiasm to the primary optic centers, the external geniculate body, the anterior corpus quadrigeminum and pulvinar, the optic tract extends as a compact group of fibres. From the primary optic centers the fibres radiate by different paths to the fore, mid and hind brain. There are three distinct tracts, dorsal, lateral and ventral. The ventral fibres arch forward forming a loop which extends as far forward as the anterior end of the temporal horn of the ventricle in the temporal lobe, then turn backward to the anterior part of the inferior calcarine cortex. Temporal lobe lesions may therefore be associated with hemianopic visual disturbances. The dorsal and lateral fasciculi pass directly to the occipital cortex. Lesions in the occipital lobe produce as a rule homonymous hemianopsia without either sensory or motor phenomena. The consensus of belief is that macular vision is likewise crossed as are the other fibres as a superficial lesion in the posterior tip of the right macular centers will produce a minute central hemiscoloma in both visual fields to the left.

Now after briefly mentioning a few of the more important considerations of anatomy which will help in our interpretation of field findings, let us take up the special conditions in which fields of vision offer more information than the ophthalmoscope or other common diagnostic aids.

First, let us take up those disturbances of the retina itself. The neuro-epithelial layer of rods and cones derives its nourishment mainly from the choroid, while the internal layers and transmitting fibres are nourished by the retinal vessels. Of course disease of the choroid rapidly affects the overlying retina but broadly speaking choroidal disturbance affects the blue field primarily whereas retinal disease tends to affect the red and green fields disproportionately. Also broadly speaking lesions of the rod and cone layer produce positive scotoma which the patient is conscious of whereas those of the ganglion and axis cylinder layer tend to create negative. Thus in luetic choroiditis early positive scotoma are produced scattered without

relation to distribution of nerve bundles. Occasionally before the ophthalmoscope shows the disease, diagnosis may be made by these scotomas. Also the progress of the disease may be better ascertained by checking the scotomas than by the ophthalmoscope. Luetic choroiditis scotomas tend to coalesce to form ring scotomas.

Idiopathic nyctalopia is characterized by no fundus changes but shows a diminution in color sense centrally and peripherally. The blue field is diminished more than the red showing that it is primarily a choroidal disturbance.

Retinitis compared to choroiditis tends to create greater changes in the red and green fields and more marked contraction of the form field. The scotomas correspond to the areas seen involved with the ophthalmoscope.

Retinitis pigmentosa is characterized by a progressive and rapid contraction of the form field, sometimes irregular but usually concentric; preservation of central vision for form and colors long after peripheral vision has become extensively lost; and the absence of central defects until the form field encroaches on central vision.

Solar and electric retinitis are of interest because of the frequency in which they appear in our industrial courts. Perimetrically they are characterized by a central or paracentral scotoma which may be temporary in character but more often permanent. In the zone immediately surrounding this scotoma permanent or temporary marked changes in the color field take place which may be indistinct, relative, or absolute scotoma. The form and color fields are usually contracted. Ring scotoma between the twentieth and fiftieth degrees may be found.

In disseminated choroiditis, high myopia or chronic interstitial nephritis with retinal oedema, in which detachment of the retina is likely to occur and a patient complains of blue or yellow blindness, early retinal detachment may be suspected. Before ophthalmoscopic evidence is clear scotomata for blue and yellow will give evidence.

Evidence of blood vessel changes, hemorrhages, wounds or injuries or colobomas can better be seen with the ophthalmoscope.

In diseases of the nerve head, papilledema, optic neuritis and glaucoma the perimeter is indispensable. Papillitis of any length of time of course gives rise to inflammation of the nerve or optic neuritis but taking it as an entity an enlargement of the blind spot is characteristic. In mild cases there may be only an area surrounding the disc which is blurred for form and color. As the pressure continues this increases to an absolute scotoma. The swelling may persist and injure the papillo-macular bundle and a central relative or absolute scotoma appear which may join the blind spot. Peripheral changes appear late and then not so much from the engorgement of the disc as from toxic action on the rest of the nerve, in other words a secondary neuritis.

A differential point between true and pseudopapillitis is that there is no enlargement of the blind spot in the latter.

In acute glaucoma we need not depend on fields to make our diagnosis but in chronic glaucoma often it is the only way to make a diagnosis. Here we have the usual following changes in order:

1. Early loss of the nasal field.
2. Sector-like defects of the superior or inferior nasal quadrants.
3. Enlargement of the blind spot.
4. Concentric contraction for form and colors.
5. Preservation of central vision for form and colors even if the total field is very small.
6. Preservation of a small temporal island and a small central island.
7. Total loss except for small temporal island.
8. Total blindness.

Since the greatest excavation of the disc is temporally and superiorly and inferiorly, the temporal fibres are more susceptible to injury. Also since they traverse a longer course to get to their destination there is more apt to be injury to them from lack of nutrition under the pressure. Consequently early or chronic glaucoma is first manifest in the nasal field. Also the bundles of nerves passing over this portion of the excavated disc are subject to greater trauma and tend to give the angular or step-like defects first de-

scribed by Ronne. A further development of the same type of destruction is called by the name of Bjerrum who first described it. In this condition the nerve bundle supplying the retina between the tenth and twenty-fifth degrees below or above the fixation center is involved. At first there is an indistinct scotoma for green in this area, then relative, then absolute, forming a small oval or semi-circular scotoma. In Seidel's sign a spur is found developing above or below the blind spot as Bjerrum's sign is developing. These may join together forming one scotoma joined to the blind spot. The contraction for form and color fields is due to the stretching and pressure on the nerve fibres. The preservation of central vision probably lies in the fact that one-fourth of the nerve fibres of the retina go to the macular area and that even if large numbers are destroyed enough remain for clear vision.

Disease of the retrobulbar portion of the optic nerve gives no evidence to the ophthalmoscope unless it is severe enough to involve the papilla or if degeneration has gone to the point of a disc picture of optic atrophy. A perineuritis of the nerve if at all severe develops into a diffuse interstitial neuritis. Field changes usually take the form of bizarre peripheral contractions for form and colors with a tendency to sector-like defects. These changes usually occur from contact infection of the nerve from orbital cellulitis, or sinus disease. If the toxic process is carried by the blood stream the loss of vision is more diffuse and scotomata may appear in any portion of the field including the central. Inflammations distal to the chiasm are apt to be unilateral, otherwise a diffuse neuritis of central origin may give a similar picture.

Toxic amblyopia is characterized by field changes limited to the area supplied by the papillo-macular bundle. Really this process begins in the ganglionic retinal cells but spreads to the papillo-macular bundle and so is usually considered under optic neuritis. The field changes are concerned with the formation of a horizontal oval scotoma which includes the macula and may include the blind spot. It may be indistinct, relative or absolute. Green and red are more affected than blue

and white. The scotoma is usually negative, the patient complaining only of central vision being blurred. The peripheral field is clear and only rarely contracted. *

Prognosis in optic nerve disease may be made by repeated fields. Green, red, blue then white disappear in order and return in the same order.

The optic nerve in the foramen is separated from the sphenoidal sinus only by a thin parchment-like membrane. The posterior ethmoids may also be in close contact. Abnormal frontals may extend back to the apex of the orbit. The dural sheath of the brain is continuous with the peristium which lines the optic foramen which makes it possible for toxic material to pass directly into the subdural space. The posterior vein of Vossius enters the optic nerve in the optic foramen, occupying in it a central position and passes back toward the chiasm. Into this vein pour the tributaries from the nose and posterior parts of the orbit. Thus the optic nerve may be inflamed from direct contact or by toxins absorbed into the papillo-macular bundle from the posterior vein of Vossius which passes through it. Of the perimetric findings the most important because it appears early, is enlargement of the blind spot. This occurs because the peripheral fibres of the optic nerve supply the area immediately surrounding the disc and these are first exposed to invasion from direct extension from the sphenoid and ethmoids. The vein of Vossius, however, soon involves the papillo-macular bundle and a central scotoma develops. Since inflammation of the papillo-macular bundle soon spreads to the other fibres we soon get a contraction of the field as well. Maxillary sinusitis with bone necrosis may cause optic neuritis in this way.

Generally speaking, primary optic atrophy presents a concentrically contracted field with shrinking out of proportion of the red and green fields. Post-neuritic atrophy on the other hand is usually marked by irregular contraction with large re-entering angles. Both may show scotomata.

Secondary optic atrophy after injuries to the nerve such as from a blow on the head may give the same picture as primary optic atrophy one or two months

before anything is evident to the ophthalmoscope.

Injuries and diseases of the chiasm due to the crossed fibres at this location may, if extensive enough, give us an exact localization of the lesion. Luetic, tubercular and traumatic meningitis are probably most frequently found lesions although disease of the pituitary is a common cause. The third ventricle, if distended, may press on the chiasm. Bony exostoses or sclerosis of the internal carotid arteries may cause symptoms. In the chiasm the fibres in the inferior portion of the nerves supply the inferior portion of the retina, the upper nerve the upper retina and each nerve supplies the nasal half of the opposite retina. Thus if the chiasm is divided through the crossed fibres the temporal field of each eye is blind. If a tumor presses equally on both nerves beneath the chiasm the upper portion of each field will be destroyed. Naturally very few lesions will be exactly in the midline or completely alike in their action on both nerves, but the anatomy here makes many lesions easily differentiated from one above or below the chiasm.

The optic tract leading from the chiasm to the primary optic centers is compact and if injured gives a sharp and usually complete hemianopsia of the right or left fields of both eyes. The macula is usually intact. Lesions up to and including the primary optic centers eventually give a white disc to be seen with the ophthalmoscope although the further the injury is from the eyeball the longer it takes to appear.

Lesions of the primary optic centers and the optic tract may be differentiated from those behind in the optic radiations by the Wernicke pupillary reaction. As we know, if light is thrown upon the retina it makes a circuit through the primary optic centers to the motor nuclei and back to the iris causing the pupil to contract. In hemianopsia if a beam of light is carefully placed on the anaesthetic retina it will give a reaction provided the circuit is intact through the primary centers but will not react if they or the optic tract is involved.

Involvement of the primary optic centers usually is associated with other neuro-

logic changes which help localize the disease.

Lesions behind the primary optic centers usually are incomplete irregular homonymous hemianopsias but may enlarge until they are complete. The breadth of radiation makes it unlikely that one lesion can destroy it all. The macular vision is usually uninvolved whereas in lesions of the tract it is unusually divided also homolaterally.

In hysteria although the field possibilities are only limited by the imagination of the patient, three types of changes are especially characteristic, concentric contraction with or without central amblyopia, tubular fields, or reversal of color fields. In differentiating hysteria from malingering, the hysteric patient may be relieved by suggestive therapeutics but nothing short of detection of fraud will make a malingerer change his story. Most characteristic of the hysteric or malingerer's field is the circular shape of the field and a field for colors about equal to the form fields.

Tubular fields, obtained when the same size field is obtained at any distance from the screen instead of varying with the visual angle subtended, are found only in hysteria or malingering.

In a paper of this character brevity necessitates bare mention of the high points of interest. Many conditions in which fields give important information have been left out altogether. Most of my material and some of the wording has been lifted intact from Dr. Luther Peters' popular text, *Principles and Practice of Perimetry*, to which I give full credit.

New York State Program for Syphilis Control

In this progress report on the New York State syphilis control program, Edward S. Godfrey, Jr., Albany, N. Y. (Journal A. M. A. March 6 1937), places emphasis on notification and the provisions of adequate diagnostic and treatment facilities. These two phases of the program must be developed first, together with facilities for returning delinquent infectious cases to treatment. By assisting the localities in which syphilis is most prevalent, namely, large cities, and by augmenting district staffs, it is hoped to raise the quality of treatment and to provide really adequate follow-up service. As times goes on it is believed that the problem will become less complex and that case and contact investigation can be more generally and effectively carried on. As had been said on other occasions syphilis control presents a real challenge to physicians.

Congenital Pneumonia: A Case Report

P. N. CHARBONNET, M.D. AND E. O. JOHNSON, M.D.

TULSA

Pneumonia of the newborn or congenital pneumonia refers only to newborns that already have evidence of pneumonia at the time of delivery and not to those cases that contract pneumonia after birth. These babies are born with pneumonia.

Since its recognition as a definite entity it has been found to be of frequent enough occurrence that it should be called to the attention of all those specializing in obstetrics that have not already listed it in their differential diagnosis of cyanosis of the newborn, as well as the general practitioner who has much obstetrics to do by necessity. Warwick¹ studied forty-three cases of pneumonia of newborn and concluded that twenty-four (55.7 per cent) must have started developing pneumonia in utero. Congenital pneumonia was found in one-half (fifty per cent) of the cases of stillborn and newborn children that showed no other cause of fatality by Koldor.² Johnson and Meyer³ found ninety-seven cases of pneumonia in five hundred autopsies of the newborn. Previous to its recognition, undoubtedly consulting pediatricians and obstetricians have mistakenly placed many of the congenital pneumonia deaths in the category of obstetrical accidents such as tentorial tears, cerebral hemorrhage, etc., thereby placing much of the blame for the stillbirth on the already distraught attending obstetrician. If autopsies could be obtained more frequently on all stillbirths much information might be obtained regarding congenital pneumonia; also if the etiology of the stillbirth remains unexplained, the patient has to overcome a great mental hazard in her succeeding pregnancy, fearing that she may have done something or failed to do something to cause the stillbirth and wondering if the next one will be the same.

The etiology of congenital pneumonia is not entirely known but there are two predominating theories. The infection theory attributes the pneumonia to bacterial invasion of the uterus after the rupture of

the membranes, or a transmission of bacteria through the placenta and umbilical vessels from the maternal circulation. The aspiration theory attributes the pneumonia to aspiration of the amniotic sac contents by the fetus in utero, or aspiration of other materials in the passage down the birth canal. Lubarsch,⁴ Viti,⁵ Durante,⁶ Menetrier and Touraine,⁷ believe the infection to be hematogenous and support the infection theory. We all are aware of the transmission of spirochaeta pallida through the placenta. However, Silbermann,⁸ Tingle,⁹ Lehman,¹⁰ Johnson,¹¹ O'Connor,¹² Hook and Katz,¹³ Helwig,¹⁴ *et al.* favor the aspiration theory. Farber and Sweet¹⁵ found evidence of amniotic fluid in eighty-eight per cent of the lungs of one hundred twenty-four infants. Warwick¹ points out the possibility of both factors, and Lauche¹⁶ explains these congenital pneumonias on an allergic basis. So much for the theoretical considerations.

What are the signs and symptoms? Clinically these babies present a picture of asphyxia and a problem in resuscitation. The impulse to breathe is present and respiratory movement of the chest wall begins but the cyanosis persists. The cry is weak and sometimes whining in character, not unlike a baby with a central lesion. The physical findings by auscultation and percussion of the chest are not satisfactory enough to make the diagnosis.

The E. and J. Resuscitator and Inhalator when turned on "Resuscitation," with a mask over the face, allows oxygen or the carbon-dioxide oxygen mixture to enter the respiratory passages at a pressure of fourteen millimeters of mercury. If an obstruction in the air passages is met, a rapid "clicking" sound is made by the machine. The use of the E. and J. Resuscitator and Inhalator is of great aid in the diagnosis of congenital pneumonia since a clicking sound denotes an obstruction to the inflow of the gas mixture.

The most efficient aid in diagnosis is an

x-ray of the chest. Without the x-ray it is practically impossible to make the diagnosis. The autopsy findings are characteristic, however.

The lesions are practically always bilateral, but not always with equal involvement of both lungs. Warwick¹ found many cases with patchy dark red colored areas alternating with gray which was well aerated lung tissue. Some cases have been reported where the lungs were uniformly red but not firm enough to be called consolidation. An associated pleuritis is not the usual finding. The microscopic appearance is as varied as the gross. Amniotic sac contents are found in some along with desquamated endothelial cells and red blood cells. The alveoli may look distended or atelectatic. Usually the alveolar walls are thickened with cellular infiltration, especially polymorphonuclear leukocytes, and the architecture of the lung is greatly distorted.

The treatment consists of resuscitation and use of oxygen either by inhalation with a mask or under a tent, elevation of the head and aspiration of mucous from the throat. Such drugs as coramine, adrenalin, atrophine and alpha lobeline seem to be of lesser value but should be employed. The fluid and mineral balance can be maintained by subcutaneous injection.

CASE REPORT

History: The patient is a twenty-four year old, white, secundi gravida, whose first delivery of a normal, 3410 grams, baby was uneventful and was followed by a normal afebrile puerperium. There is no history of any serious illnesses or operations. She had a tonsillectomy in 1934, and has had several teeth extracted.

Her menstruation was normal, every twenty-eight days and duration being four days. The last menstrual period was March 15, 1936, making the estimated date of confinement December 22, 1936. At the time of her first visit, May 16, 1936, she had only slight nausea but no other symptoms of pregnancy.

The physical examination reveals a tall, well developed, eutrophic white female, weight one hundred ten and three-quarters pounds, with a muddy complexion and acne over the face. The eyes, ears and nose are essentially normal. Those teeth

present show no cavities or decay. No pyorrhea. The thyroid is not enlarged. The findings in the heart and lungs are within normal limits, blood pressure being 100/80.

Abdomen: Fair musculature with many striae present. No hernias or tenderness. Abdominally the uterus, liver and spleen are not palpable. The pelvic examination shows a slightly relaxed introitus. The cervix is eroded slightly and the uterus enlarged two or three times normal size. The adnexae are negative. Pelvic measurements: I. Cr. 28, I. Sp. 26, I. T. 32, E. C. 22, B. I. 12, D. C. 12. Laboratory tests showed the blood Wasserman negative and urine essentially negative.

Course: Her entire ante-natal course was uneventful. Her blood pressure varied from 100/80 to 138/75. The urine remained free of albumin and sugar. Her total gain in weight from the first visit to delivery was thirty-three pounds in spite of a restriction in the diet. For this reason careful watch was made in the size of the baby.

On December 8, 1936, rectal examination showed the cervix to be dilated about five to six cms. the membranes intact and the head one fingerbreadth above the spines. At this time it was decided the child was approaching four thousand grams and any further delay might yield an oversize baby. Accordingly the patient was sent into the hospital for a medical induction of labor.

The patient entered St. John's Hospital, Tulsa, Oklahoma, for induction the evening of December 8, 1936. One ounce of castor oil, a hot enema and quinine, two doses of five grains each were given in the morning of December 9th. Uterine contractions began at 10 a. m. December 9th. At 10:15 a. m. nembutal, grains three, was given. The labor pains continued, and the head descended gradually, reaching the perineum at twelve noon with the cervix fully dilated. At this time the membranes were ruptured instrumentally, allowing clear normal appearing amniotic fluid to escape. The fetal heart remained regular and strong throughout the entire course of labor. At 12:05 p. m. the patient receiving a few whiffs of chloroform* a normal three thousand eight hundred-gram male

*The patient requested chloroform anaesthesia because she liked it with her first delivery.

infant was born spontaneously in LOA position, without difficulty. The child breathed spontaneously immediately and then stopped. A small amount of mucous was aspirated from the throat and a carbon-dioxide oxygen mixture was given, with good results, but all the cyanosis did not entirely disappear. The cord dressing and eye medication was completed in the usual manner and the child taken to the nursery. The placenta separated spontaneously and was expressed from the vagina without difficulty. The patient was awake when the placenta was expressed. Inspection of the cervix and perineum showed them to be intact. Only a small amount of blood was lost and pituitrin, one cc., was given intramuscularly, which contracted the uterus well.

The child was apparently in fair condition until one hour after delivery when the nurse noticed extreme cyanosis. Aspiration of the throat and lowering of the head failed to relieve this condition. The child had a whining cry. Ten cc. of maternal blood was given intramuscularly in both hips and while oxygen was given, the color remained fairly normal. The Drinker Respirator was tried but spasmodic attempts at breathing irrespective of the rhythm of the respirator made this obviously impractical. The E. and J. Resuscitator and Inhalator apparatus was tried and a rapid clicking resulted, showing an obstruction in the respiratory tract. Finally receiving pure oxygen under a tent with the head elevated, the child seemed to maintain a fairly normal color for a while. Adrenalin and coramine were used later but the infant grew progressively worse, expiring twenty-three hours after birth.

The autopsy findings were striking. No abnormalities were found except in the lungs. Both lungs in their entirety were red in color, solid with no air spaces. Grossly and on the cut surface a piece of the lung could not be differentiated from a piece of liver, presenting a picture of a lung in the state of red hepatization. Microscopically the architecture of the alveoli could not be discerned. There was much cellular infiltration of the alveolar walls but no evidence of amniotic sac contents in the bronchioles or alveoli. Bacteriological studies of the nasal and up-

per respiratory secretions at the autopsy showed a mixed culture with no predominating organism. The pathological diagnosis was multilobular pneumonia.

The puerperium was uneventful and there was no clinical evidence of an intra-uterine infection, or an infection elsewhere in the mother's body. The highest temperature being 99° on the same day following delivery; all previous hospital temperatures having been normal. On the third post-partum day at the time of the greatest engorgement of the breasts, the temperature reached 98° but was normal thereafter. The lochia remained normal in color, odor, and amount. The patient was discharged from the hospital on the tenth post-partum day.

This case is difficult to explain from the standpoint of either of the theories of infection or aspiration. From the academic standpoint we should have liked to have had intra-uterine cultures from the uterus immediately following delivery and about the third day post-partum; also a blood culture from the mother and umbilical cord at the time of delivery might have been enlightening even though the bacteriological studies of the nasal tract of the baby at the autopsy were negative. It is interesting to note that this patient had five to six centimeters dilatation of the cervix before labor was induced. No evidence of aspiration of amniotic sac contents was found in the lung sections. Because the mother showed no clinical evidence of infection and because no evidence of aspiration of foreign material was seen in the lungs we are inclined to look to a physiological basis for the etiology in this case. We have never seen a case so far advanced, nor have we been able to find any report in the literature describing such advanced pneumonia in the newborn. Dr. I. A. Nelson calls attention to the possibility that the pathological picture of the lungs might have been greatly influenced by the vigorous oxygen therapy employed.

CONCLUSIONS

1. Congenital pneumonia occurs more frequently than is commonly believed and should be included in the differential diagnosis of cyanosis of the newborn.

2. Autopsies should be done on all still births and infants dying soon after birth.
3. A new diagnostic aid which has not been described as such, is afforded by the E. and J. Resuscitator and Inhalator.
4. A case of congenital pneumonia is reported.

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The Physiological Period of Relative Sterility and Fertility in Women*

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This subject, the physiological period of relative sterility and fertility in women, of such interest to the laity, should be to us, one of scientific and practical interest. Medical problems call forth that innate curiosity in man, challenging our best efforts, often resisting our scientific attacks, to remain, at least for some time, unsolved—unexplained. Practically, regardless of our personal feelings toward the much discussed problem of birth control, we are all too often faced with this particular question: should it be practiced and if so, how? It seems, especially in the past we have stood too much on our inalienable rights as American citizens, by evading the question, or refusing an answer. And as a consequence literature and devices put out by commercial interests, with no scientific background, caring even less for the one thing the medical profession upholds, namely, happiness and health of their fellow man, are available in any type retail store . . . yes . . . even available through the house-to-house canvasser.

The problem, therefore, is an interesting one—we may say that it has a humane

aspect—yes even one of economic value. If we can define those days of potential fertility, then we can advise that time best fitted for conception in previous sterile couples; we can advise those days fertile, so as to place conception at the time of year most desirable for the health sake of the mother and infant, and can further advise as to the control of the size of the family with no harm to the aesthetic, physical or moral being—truly an accomplishment.

The problem is not new and in answering the criticism of Fraenkel, that should this theory be fact, then long ago it would have been known by lay people, one has only to observe the history of the Hebrews. It is a religious tenet among the orthodox Jews that a woman is unclean for fourteen days after the beginning of her menses and at this time, it is unlawful to have sexual relations. The resumption of relations, therefore, occurred just at the time of ovulation or the fertile period, and to this may be ascribed the prolific character of the Jewish race. Capellman in 1883 was probably the first writer to suggest the possibility of a "safe period" in the cycle, although more recent knowledge has shown his recommendations to be

*Read before the Sixth Annual Fall Conference, Oklahoma Clinical Society, November 5, 1935.

quite incorrect. Possibly he drew a parallel between the rutting, oestrus or "heat" period in animals and the menstrual period in women. Diametrically these are opposed—the "heat" period in animals is their ovulation, the time when they accept the mate with resultant pregnancy, and if one could make comparison, it would be at the ovulation time in women—not the menstrual time. Naturally, advice followed in which women felt their fertile time was during the menses, their sterile time at ovulation, and since failure rewarded their acceptance of this, is it any wonder that the widespread belief followed, that at no time in the menstrual cycle is a woman sterile.

Perhaps it would be well to speak of the menstrual cycle. Beard states that menstruation is an abortion of a decidua prepared for an egg which was not fertilized. It is unquestionably the non-fertile reproduction or sexual cycle in life, occurring in all primates and to some extent in some sub-primates. We find in many animals that there is a combined menstrual and estrum cycle, the estrum period being absent in the human female. So we may say without fear of contradiction that menstruation occurs as the result of the failure of an ovum to be fertilized. Although menstruation is an extremely complicated process, we can state that it is the result of an exciting factor or hormone present in the pituitary gland, affecting the ovary and endometrium. Generally speaking, we find this cycle to follow a fairly definite course, at least its variation to be at most a few days in the average normal healthy adult female.

Returning to the consideration of our subject, it would seem that the solution of this question depends in main upon three factors:

1. The time and duration of fertilizability of the ovum.
2. The duration of the impregnating ability of the sperm, or the duration of fertility in the sperm in the female genitalia.
3. The determination of the time of ovulation.

As to the fertilizing ability of the spermatozoa, Ogino states that it cannot live longer than three days, deducing from a

series of known time of cohabitations, that all resultant pregnancies, save one, were in a time period within three days preceding ovulation, whereas in thirty cohabitations between the sixth and tenth days before ovulation, resulted in no pregnancies. Knaus in tests on mammals found the spermatozoa to lose their impregnation ability at the latest, after forty-eight hours, when placed into the female genital organs. He feels that the movement ability of spermatozoa does not signify impregnation ability. In return, Fraenkel and Muernberger found living spermatozoa in normal tubes as late as fifteen days after the latter's cohabitation. Nothing is said as to their impregnating ability by these authors.

Knaus states that spermatozoa do not preserve their power of fecundation longer than two days. Monech and Seguy find that the vaginal acidity is not an important factor in influencing the life of the sperm, but believe that the body temperature alone will kill all sperm within twenty-four hours. Anderson tends to agree somewhat with Ogino in that seventy-two hours is the maximum time in which a sperm may live.

It has been expressed in the past very wittily, perhaps truthfully: "The presence of sperm in the female genital tract two weeks after alleged intercourse is no longer a scientific question but a moral issue."

As to the time duration of the fertilizability of the ovum, we meet with some slight divergence of opinion. Knaus, in an early review of his work, stated there is no definite information, but later added that it could be observed directly, by noting the result of coitus before and coitus after ovulation. He states that some few hours after ovulation, there is formed around the ovum a protein membrane, gradually becoming thicker, which in a short time, probably a few hours, prevents the entrance of the spermatozoa. He further holds that there is a ten-day wandering of the ovum, before implantation, and therefore, even should conception take place, it would by necessity be forced to be not later than the seventeenth day or the eighteenth day of the menstrual cycle, otherwise the beginning hemorrhage of menses would preclude any implantation in the endometrium of the uterus. Novak

agrees, too, that the ovum in general have the power of fertilizability a matter of one or two days. Mellendorf and Grosser state that the ten day wandering period is problematical and that there may be a more rapid implantation.

In general, though, we find that most unbiased authors are agreed within at least a few hours as to the life of the ovum, taking into consideration that this "life" means its power of being fertilized.

In main, therefore, the determination of the time of ovulation seems to be the characteristic "fork in the road" in that:

1. No time relation exists between ovulation and menstruation.
2. Ovulation occurs at stated intervals in a menstrual cycle.

It would seem to me that when this question is answered thoroughly and convincingly, then much controversy will have ended in regard to this medical problem.

There is no question that the time of ovulation is important to determine the interpretation for normal menstruation, for the estimation of the duration of gestation. Ogino, as the result of comparative animal experimentation together with one hundred eighteen laparotomized cases, in which both ovaries were examined for matured follicles, ruptured follicles and corpora lutea concludes that ovulation or the rupture of the Graafian follicles lies in a five-day period between the twelfth and sixteenth day before the next expected menstruation.

Considering the order in all manifestations of nature, realizing the fact that menses occur with practical regularity, it would seem that two processes so intimately related should bear a definite relation with each other. In other words, menstruation being the result of failure of fertilization, following the death of the ovum, it would seem inconstant in nature to have menstruation follow any variable time as the result of this phenomenon.

Knaus, in a series of interesting experiments, about seventy in number, reaches much the same conclusion as Ogino. He found that normally in the non-pregnant uterus, there is a rhythmic contraction, which upon the injection of the extract of

the posterior lobe of the pituitary, responds with an increase of the time and frequency of movements. In order to record such changes, a special apparatus was constructed similar to one used for uterosalpingography, the mercury manometer, by means of its connection in the cervix to a uterus filled with oil, transferring and recording such variations upon the paper of a kymographion in the form of curves. He found the uterus is refractory to the action of pituitrin, when corpus luteum is present, and this was noticeable as soon as twenty-four hours after ovulation, the maximum time being forty-eight hours. Thus by daily careful examination he found on the day that there were shown no reaction on the kymographion from the injection of the pituitary, that day, the corpus luteum was formed, having been preceded by ovulation not over forty-eight hours. He concludes that regularly menstruating women ovulate on the fourteenth to the sixteenth day of the menstrual cycle. He states quite definitely that in the regular twenty-eight day cycle that the time of conception can absolutely be determined and adds further that the idea that women can conceive on any day of the menses is due to unreliable statements, irregular periods which in themselves mean irregular ovulation, and therefore an irregularity in the estimated time of pregnancy. He is agreed that lactations, starvation, great physical strain, changes in climate, chronic diseases and disturbances of metabolism are apt to inhibit ovarian function; that is, break the regularity of the menstrual cycle, hence of ovulation and a result do away with the practical applicability of this rule. He further arrived at this period of ovulation by watching the more or less indefinite signs of ovulation, so-called middle pains, by histological studies of the corpora lutea, the mucous membrane of the uterus and roentgen castration during the various stages of the menstrual cycle. He found in animal study that cows have a twenty-one day estrus yet can only be fertilized during the first forty-one hours. He says that after ovulation due to the resultant formation of corpus luteum, the female organism is sterilized by its own corpus luteum, it, in itself prohibiting any further rupture of follicles. In a more recent article following further observation and study, his

opinion remains unchanged, agreeing with Ogino, except to state that this worker extends a period of conception capacity too long, thereby lessening the period of sterility more than is necessary.

Similar studies undertaken by Parkes in England, Spiegel in Germany, have shown a definite relationship between the termination of ovulation and conception.

Whittenbeck, in a few reported cases, seriously questions the significance of corpus luteum for the suppression of the uterine contractions, and consequently leads to a doubt as to the dominating position of the corpus luteum for the suppression of the uterine contractions, and consequently leads to a doubt as to the dominating position of the corpus luteum. He bases this criticism on an exception in one case out of thirty-one cases which, according to his critics, was shown to be pathologic in nature. He denies the findings of Knaus, in that he states that ovulation is not an exact time process in relation to menstruation, in that among many factors, nervous stimulation causing hyperemia may bring about a premature ovulation. He further shows that the uterine reaction to pituitrin, posterior extract of Knaus is untenable, in that this has no particular connection with ovulation, since a corpus luteum can even form without an unruptured follicle. Disagreeing with Knaus, he states the ten day wandering period of the ovum is yet to be proved. Knaus in his rebuttal criticism notes that Wittenbeck examined his cases histologically, naturally, this not showing whether there is function or not, the functional behavior being the criteria.

Fraenkel, in years past also denies this period of physiological sterility, saying that should such have been the case, that long ago would it have been known by lay people. He adds that ovulation and menstruation are not synchronous, yet a certain time relation exists. He feels that ovulation is influenced by many outside influences, as sexual excitement, etc. Knaus in his discussion of this argument states that it would be very difficult from a practical standpoint to deduce from clinical trial the value of the experimentation as it would have taken at least six years comparing the value of one cohabitation which would be necessary in order to prove

by actual usage the value of this theory. Therefore, he adds that biological investigation, as well as clinical observation, must be necessary for this study.

Hartman of Baltimore, found that ovulation in the human and monkey may occur between the days nine and eighteen, counting the beginning of the flow as day one, but says that ovulation usually takes place near the mid-interval between the two menstrual periods, that is, about day fourteen.

Crosser, correlating experiments on man and mammals, decides with Knaus that the normal viable life of the ovum is only a few hours, but feels that coitus has a great deal to do with ovulation, granting at the same time that there is a spontaneous ovulation period about mid-way between the menstrual cycles. He has shown this, unfortunately, by observation of rabbits, their reaction being somewhat questionable compared with that of the human being. Yet he has found ten twenty-four hour embryos conceived between the second and tenth days of the cycle, ten twenty-four hour embryos conceived between the eighteenth and twenty-fourth days of the cycle, and only four conceived at the time as worked out by Ogino and Knaus.

Novak grants the optimal conception period is in the span that normally embraces most ovulation, but is somewhat dubious in accepting this as being the facts in each pregnancy, as he feels that other factors may influence the ovulation time.

Riebold finds that over a period of some years that most menses differ. He feels that the interval between menses may be quite irregular, yet in considering the number of menses over a period of one year, there will be found a compensation, resulting in the average number of menses within the year to be approximately the same in number. He feels that the subjective and objective signs of ovulation are of much greater value in the determination of sterility and fertility than would the dogmatic statements of Ogino and Knaus, considered alone.

Kurzrok feels that many cases of sterility are due to failure of ovulation. He discusses the usual symptoms of ovulation in particular mentioning the inter-men-

strual pain or "mittelschmerz," which he states is due to the great distension of the follicle preceding rupture, and the intermenstrual spotting, which is somewhat uncommon and is probably due to a change from the proliferative to the premenstrual changes in the endometrium itself. Kurzrok *et al* add their own method to the determination of ovulation, that is, the sudden appearance of Prolan A (follicle stimulation hormone) in the urine of non-pregnant women, as determined by the Zondek method. They feel that ovulation occurs within twenty-four hours after the excretion of Prolan A, accepting naturally that the condition of the ovary is normal as far as its function is concerned.

C. W. Anderson offers a quite ingenious method of describing the symptoms of ovulation, which he adds are often mild in character. Palmer in 1892, first mentioned some of these symptoms, thinking them due to an oophoritis or a peri-oophoritis, resulting in many unnecessary operative procedures. Keeping in mind that the ovary receives its nerve supply from the tenth dorsal nerve, Anderson states that many times the symptoms of ovulation are interpreted as gas on the stomach as the pain is high, above the level of the umbilicus.

In the opinion of J. Seguy and H. Simonnet, the signs of ovulation in women are

much as those above mentioned save with the addition of a more outward and more readily detected sign, in the appearance of a glossy and extremely fluid secretion in the cervical canal, this secretion rendering the cervix permeable to spermatozoa.

The difficulty that at once suggests itself as to the application of the rule in women with cycle other than the twenty-eight day type. For practical purposes it would seem that one should consider carefully the menstrual cycle of this woman in question for a period of about twelve months, figuring that time on the basis of the shortest period and that of the longest period, attempting at all times to advise the woman as to the symptoms of ovulation.

SUMMARY

In the use of this method, one has only to follow the Latz formula as given below. In itself it seems to be self-explanatory. Should there be a reasonable variation in the menstrual cycle, one has only to list the fertile nearest the previous menstruation in the shortest interval, and the fertile as listed nearest the longest menstrual period, the combined fertile days being that time of fertility in the individual.

I make a further attempt to teach the individual woman her signs of ovulation, when to expect them and for her to make a careful note of those symptoms as well as the date of each menstruation.

LATZ FORMULA

	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41
21 M	0000	†000																			
22 M	0000	†000																			
23 M	0000	†00	0																		
24 M	0000	†0	0	0																	
25 M	0000	†	0	00																	
26 M	0000	†	00	0																	
27 M	000	0	†0	00																	
28 M	00	0	0†	00	0																
29 M	0	0	00	†0	00																
30 M	0	00	0†	00	0																
31 M	00	00	†0	00																	
32 M	0	00	0†	00	0																
33 M	00	00	†0	00																	
34 M	0	00	0†	00	0																
35 M	00	00	†0	00																	
36 M	0	00	0†	00	0																
37 M	00	00	†0	00																	
38 M	0	00	0†	00	0																
39 M	00	00	†0	00																	
40 M	0	00	0†	00	0																
M—Menstruation †—Ovulation 0—Fertile Days																					

1. I feel that this period of fertility and sterility in women should occupy a definite place in the practice of medicine.
2. For all practical purposes, I believe that this theory is sound as shown by many careful observations as well as my own experience.

Supravaginal Hysterectomy vs. Total Hysterectomy*

HUGH C. JONES, M.D.
OKLAHOMA CITY

In selecting a type of hysterectomy, we must consider one suitable for safety. The mortality and morbidity must be low and the immediate cause of the trouble removed, as near as possible. The additional risk of total hysterectomy surpasses the incidence of carcinoma developing in the cervical stump.

Most hysterectomies are done for fibromyomata, with an associated normal cervix and many of them done by the occasional operator. The supravaginal technique offers a wider margin of safety. It is a satisfactory operation. The blood loss is minimum and easily controlled, the two uterines being the main blood supply. Trauma to surrounding organs is unnecessary; these being the bladder, vagina, rectum and pelvic peritoneum, which are always in the visual and operative field. The integrity of the vagina is maintained by the cervical stump. Its presence and anchorage of round ligaments maintain the interpelvic support, prevent herniation and produce a comfortable pelvis.

Infection also plays an important part. In supravaginal cases we are outside the infected field. It is not necessary to suture through the cervix. A line of continuous sutures all around (button-hole fashion) closes it.

A report of R. L. Pearce, last year, reporting one thousand nine hundred cases of hysterectomy, he found that the evidence of stump cancer, associated with fibroids was less than one-half as great as associated with general pelvic inflammatory diseases. Four hundred ten patients of the fibroid group, four developed a stump carcinoma, or 0.97 per cent. On the other hand, two hundred one cases of general pelvic inflammatory disease, four developed cancer, or evidence of 1.99 per cent.

In these one thousand nine hundred con-

secutive cases of supravaginal hysterectomy there were thirty-four deaths, a mortality of 1.7 per cent. Out of eight hundred ten of this number reporting and followed from five to twenty-five years, eight cases developed carcinoma of the cervical stump or an incidence of one per cent.

Before supravaginal hysterectomy is done, the cervix should be carefully inspected in all cases. Biopsies should be made when there is the slightest suspicion. Lacerations and erosions should be excised or cauterized. The cervix then inspected twice a year. It has been suggested that following supravaginal cases, the cervix has a reduced blood supply and due to scar tissue formation, that cancer more easily develops, but these views have never been satisfactorily supported. The occurrence of cancer of the stump is controlled and caused by the same unknown factors of the cervix in general. About eighty per cent of stump cancers originate from the squamous epithelium of the vaginal cervix. It is reasonable to believe that a method of prevention of cancer developing here is thorough cauterization. Cauterization in this instance is done as much as desired, approaching a destruction of a large part of it. This method even in early discovered cancers of this and other regions of the body has a result not surpassed by other methods of treatment. Carcinoma developing in the first year after supravaginal hysterectomy, it is reasonable to presume that the cancer was present at the time of operation.

When these stump cancers come for treatment the difficulties of these are many and a previously removed cervix would have solved the problem.

The anatomical distortion produced by previous laparotomy makes these cases undesirable for surgical removal. Radiation then is the treatment of choice, but here due to the previously removed uterus, the anatomy is changed and often a cor-

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

rect application of radium is difficult and tissues are often over irradiated. On the other hand if there has been extensive carcinoma destruction, leaving a crater into which the radium is packed, a lesser dose is used in order to protect the rectum and bladder. Radium is capable of controlling the disease in and adjacent to the cervix. External irradiation is reserved for extensions beyond the cervix.

In total extirpation of the uterus the bladder must be carefully dissected from the uterus and cervix and this may be difficult if there has been an extensive pelvic inflammation. One who has had the formation of a visico-vaginal or recto-vaginal fistula is skeptical of doing this type of operation again. Inflammatory adhesions usually confine themselves to the posterior part of the pelvis. The uterine arteries must be isolated and ligated separately, for their retraction may produce an uncontrollable hemorrhage. Sepsis complicates many of the total removal cases. The vagina cannot be sterilized before operation and it must be entered in this type of operation. Many patients have very deep pelvis and associated large fibroids or extensive pelvic inflammatory conditions make it a difficult procedure. The low incidence of stump carcinoma does not justify the additional risk of total extirpation.

Cases of large fibroids or cases with chronic enlarged tubes and dense peritoneal adhesions present a condition for operation which demands conservation of time shock and loss of blood. These cases usually are subjected to a supravaginal technique. It is comparatively easy and quickly done.

Total hysterectomy cases are carefully selected. The uterus is not too large, there is little pelvic pathology and on finding these conditions the technique is carried out. But on entering the abdomen and things do not look easy and favorable. there is a right about face and a return to the safe and rapid supravaginal amputation. Should all total hysterectomy cases be carried to completion as originally planned the mortality would be much higher. It is the contention of writers that a greater number of women develop symptoms of the menopause at an early age after hysterectomy and ovarian con-

servation than those not operated. In one hundred ninety-seven cases of both types of operation, the occurrence of menopausal symptoms with or without ovarian conservation, the percentage was the same. There is a difference in the onset of symptoms. The average time of onset is considerably delayed in the supravaginal hysterectomies. This would suggest some relation between retained uterine tissue and the menopause symptoms. The more cervical or uterine tissue left the more delay in the appearance of the symptoms. There must be an endocrine function in both.

SUMMARY

The only purpose of total hysterectomy is to avoid the possibility of cancer occurring in the stump and an occasional case of a large infected cervix.

It is needless to say and folly to disregard mortality figures to prevent what might happen; and I know of no cancer of the stump occurring where the cervix has been carefully inspected and completely cauterized before operation of supravaginal hysterectomy.

* * *

DISCUSSION

Dr. Baker:

I appreciate this subject so much that I cannot refrain from discussing it a little. The first thing I want to take up is the subject of menopausal symptoms. Keeney has shown in 82.5 per cent of conservatism of the ovaries, at least one ovary, there have been no manifestations as to the menopause symptoms. Dr. Jones mentioned the fact, and I think it is something we all should remember, that we certainly should not remove the ovaries even in patients up in years, especially if there is any length of time before the menopause. These women go through such a severe change that I think it is a serious thing to remove the ovaries. When we remember that there are ninety-seven to ninety-eight per cent of all carcinomas of the uterus developing in the cervix, and we remember that eighty per cent of these carcinomas are in the beginning the squamous cell type, it is a lot better for us because we can see the squamous portion of the cervix on examination. That is better for us and better for the patient, because so many times the glomular type is

overlooked on examination. Unless we are very careful in making the examination in the cervical canal, the cervical cells are overlooked. So we are blessed to that extent, about eighty per cent are the squamous cell type. Dean points out the fact that it is better to do a pan-hysterectomy in cases of men who are doing these things every day. He points out the fact that in carcinoma of the cervix mortality is not as high in his opinion, with cauterization and repair of the cervix, in the hands of the average man. I am frank to admit that my cases of pan-hysterectomy do not do as well as those of sub-total hysterectomy. They run more temperature and run it a little longer. But my end results so far have been just as good. I have had two deaths from hysterectomy, one twenty-five years ago due to hemorrhage, in a multiple, pedunculated fibroid in which the fibroid anteriorly was pushing into the bladder and posteriorly into the rectum. I had shock due to bleeding. I know more about transfusions now, and today I would not have lost that patient. Fifteen years ago I over-operated on one patient. Percy does everything from tonsils to hemorrhoids and apparently gets by with it, but he is a clever operator and he knows how to get by with it. I undertook to do too much. I had a woman suffering with gall stones that had been giving her a lot of trouble. I did a cholecystectomy. She also had a fibroid and had been having menorrhagia, but her hemoglobin and red count were all right. The anesthetist said, "The patient is fine, go ahead." I went ahead and did a hysterectomy, and I had a mortality. In either type, we should not over-operate. I will say, in the average operator, doing hysterectomy once or twice a week, that if the cervix looks normal we can cauterize that cervix if we think it is necessary and do a subtotal hysterectomy without a mortality and with much less discomfort and a more rapid recovery. In the majority of lacerated cervix, we can do a stand-off operation on the cervix and a subtotal hysterectomy, and I believe our end results are much better and our patient gets off the table quicker, with less shock, and the end results are better.

Dr. Horace Reed:

In my experience of something over

twenty-five years, I have reached the conclusion that there are about two indications for total hysterectomy. The first is carcinoma of the fundus. Notice, I don't say carcinoma of the cervix, because I don't think a hysterectomy is indicated in that, because you can get equally good results with radium with less mortality. The second indication is a diseased cervix in connection with some condition aside from that which requires hysterectomy. I would say one thing about when it is not indicated, and that is in prolapse of the uterus, particularly after the menopause. If the doctor who does that follows his patient, he finds there is a prolapse of the whole vagina and bladder and rectum. There is a new technique of bringing the broad ligaments down under the bladder; I haven't tried it but in one or two cases. There is a difference in the operation. I formerly got a number of infections in the abdominal incision in trying to do total hysterectomies, and I wonder why I did it. You have got to have your force completely educated as to what not to do. Don't use the same needle in the abdominal wall that was used in the region of the vagina, or any other instrument or your own fingers. It takes meticulous care to prevent getting infections, and if one will watch every step and the instrument nurse understands the dangers of infection, after you once get through it. I have found the amount of temperature is on the average less than the subtotal. In closing the vagina, I don't close it altogether. In this way the drainage is right down the vagina and there is no retention of it anywhere, and the temperature chart shows even less in some of these cases of total hysterectomy. If the cervix is healthy and the operation is for fibroid, I think it is using poor judgment and taking an added unnecessary risk to remove all of the cervix. I have done hysterectomies for twenty-five years and have done the great majority by leaving the cervix. If those patients have developed carcinoma, they have gone to another doctor. I have had to remove a few for endocervicitis or a diseased cervix because of a discharge which was annoying to the patient, and they can be removed through the vagina, or it can be completely destroyed by the cautery. I want to congratulate Dr. Jones for his very sensible discussion in this paper.

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McAlester, Oklahoma

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McAlester, Oklahoma

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Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

ANNUAL MEETING

In this issue of THE JOURNAL you will find the complete program of the meeting to be held in Tulsa, May 10th, 11th and 12th and it appears to be one of the most attractive programs that the State Medical Association has offered in recent years. Our guest speakers are men of international prominence and as you will notice they are going to discuss timely subjects relative to medical organization and medical sociology, which are of intense professional interest. No one can speak better along the line of medical organization than Dr. Olin West, Secretary of the American Medical Association; no one is in better position to discuss sociological subjects than Surgeon General Parran,

and Drs. Elliott and Speed are outstanding men in their respective fields.

The Tulsa Committee, headed by Dr. A. W. Pigford, has made special preparation for your entertainment and convenience, and we know from previous experience that the Mayo Hotel has every facility for making your stay in Tulsa comfortable.

The early morning program, beginning at 8 o'clock each morning, will consist of operative and dry clinics at the Tulsa hospitals and as these hospitals have numerous operating rooms everyone who attends will be able to see the operative procedures and will be able to derive much benefit from this sort of instruction.

The members of the House of Delegates will please notice the published report of some of the standing committees and should familiarize themselves with any subjects that will be brought before this body in order that they may intelligently present and discuss them. The members of the House of Delegates should be sufficiently interested to be at the meetings on time so that the work of this body will not be delayed.

The Woman's Auxiliary has prepared a very instructive and entertaining program and the doctors' wives, as usual, can be sure of wonderful hospitality as is always offered by the ladies of our convention city. They are particular fortunate in having the National President, Mrs. Robert E. Fitzgerald, as guest of honor.

With this brief outline of the program calling your attention only to the high points of the meeting, we can be assured of the largest registration that the Oklahoma State Medical Association has ever had. Your attendance will be not only of marked benefit to yourself but will help to carry on the work of organized medicine in Oklahoma.

APPRECIATION

The Oklahoma State Medical Association wishes to express appreciation for the financial assistance given by the Oklahoma City hospitals in helping to carry on the work of the Legislative Committee.

Editorial Notes—Personal and General

DRS. ANSON L. CLARK and D. W. BRANHAM, announce the opening of the CLARK-BRANHAM CLINIC, 514 Medical Arts Building, Oklahoma City. Practice will be limited to urology.

THE AMERICAN MEDICAL GOLFING ASSOCIATION will hold its twenty-third annual tournament at Seaview Country Club, Atlantic City, New Jersey, Monday, June 7, 1937.

The Chairman of the OKLAHOMA REGIONAL FRACTURE COMMITTEE announces a dinner meeting of the Committee in the French Room, Mayo Hotel, Tuesday, May 11th, from 5:30 to 7:30. All members of this committee please take notice and attend, if possible, as this is indeed an important meeting.

News of the County Medical Societies

CARTER County Medical Society met at Hotel Ardmore, Ardmore, Oklahoma, on April 5, at 7:00 p. m. The following subjects were discussed after the dinner:

"Buerger's Disease" with case for demonstration from the Hardy Sanitarium, by Dr. R. C. Sullivan, Ardmore. Discussion opened by Dr. C. A. Johnson, Wilson; Dr. J. M. Holland, Madill; Dr. L. C. Veazey, Ardmore.

"Chronic Alcoholism in the Hebephreniac Stage" by Dr. Gable of Central State Hospital, Norman. Discussion opened by Dr. Rayburn, Norman; Dr. J. C. McNeese, Confederate Home Hospital, Ardmore; Dr. Sadler, Soldier's Hospital, Sulphur.

"Neurosis" by Dr. Ben Cooley, Norman. Discussion opened by Dr. R. M. Parish, Ardmore; Dr. Walter Johnson, Ardmore.

RESOLUTIONS

DOCTOR W. F. HAYS

WHEREAS, On February 26th, 1937, our friend and co-worker departed this life by reason of coronary thrombosis;

AND WHEREAS, we the members of the Rogers County Medical Society, knowing his unfailing application to the task at hand after graduation from the University of Kentucky Medical School and one year post-graduate course at the Rush Medical College, Chicago, Illinois;

AND WHEREAS, we being constantly associated with him and being fully aware of his constancy of purpose in his life's work, the relief of suffering, unmindful of his own well being or financial gain;

BE IT RESOLVED, that this society hold of record this expression of deepest sympathy to those from whom he so untimely departed, and a deep feeling of regret in his unfinished work—the relief of the ill, the counsel of the bereaved and the unfailing sympathy of a truly benevolent heart;

BE IT THEREFORE RESOLVED, that a copy of this sentiment be sent his family and set forth in the minutes of our Society, and a copy be sent The Journal of the State Medical Association.

F. A. Anderson, M. D., Chairman,
J. C. Bushyhead, M.D., President,
W. A. Howard, M.D., Secretary.

OBITUARIES

DOCTOR J. W. ECHOLS

Dr. J. W. Echols, a resident of McAlester since 1910, when he came to McAlester to become the first prison physician, under Gov. C. N. Haskell, answered death's summons the night of March 22nd. For fourteen years he served as state's physician, then resigned to care for his private practice. Stricken with paralysis some four years ago, he was unable to continue his work.

Born sixty-two years ago, at Longview, Texas, he was educated in nearby communities and graduated from the Terrill, Texas, high school. His medical training was at Louisville, from which university he returned to Texas to practice at Gainesville until moving to Oklahoma at the time of statehood. A brother, R. E. Echols, was a state senator and later a member of the corporation commission.

For many years Dr. Echols was a member of the board of education in McAlester and was president of the board during the period of the greatest expansion. He was a member of the Masonic lodge, with affiliation in all of the bodies of that fraternity. He also was active in the Presbyterian church, being an elder for many years; superintendent of Sunday school, director of the choir and otherwise serving the early day congregation.

Dr. Echols was a writer on varied topics and several books were published from his pen.

His wife, who was Miss Fay Echols before their marriage at Longview, survives. Three sons, a daughter and two sisters of Dr. Echols also mourn his passing. The sons are Allen Echols of New York City; Jack Echols of Los Angeles; Tom Echols, New York City. The daughter is Mrs. Ralph Peters. His sisters, both residing in McAlester, are Mrs. T. W. Wheatley and Mrs. R. D. McAfee.

Funeral services were conducted March 24th with interment in the Masonic section of Oak Hill cemetery at McAlester.

DOCTOR J. D. WINTER

Dr. J. D. Winter, for eighteen years a resident of this state, passed away March 9th, 1937, in the Veteran's Hospital, Muskogee, of carcinoma of the stomach.

Dr Winter was born in Mississippi fifty-one years ago. He graduated from the University of Tennessee, class of 1909, and practiced at Houlika, Miss., until 1919, removing to Hobart, Oklahoma, where he practiced until 1935 at which time he removed to Wynnewood, Oklahoma, where he practiced until his last illness.

Dr. Winter was a member of the Masonic fraternity, a World War veteran, and held the rank of Major in the Army Reserve.

RECENT DEATHS

(Insufficient data available for obituary.)
Dunham, Howard C., Sulphur, March 15, 1937.
Chambers, M. E., Vinson, March 30, 1937.
Jacobs, J. C., Miami, April 2, 1937.

PROGRAM

Forty-Fifth Annual Session of the Oklahoma State Medical Association at Tulsa, May 10, 11 and 12, 1937

GENERAL INFORMATION

Meeting Place—All meetings will be held in the Mayo Hotel. Telephone, Tulsa, 3-2141.

Registration—Sixteenth Floor, Mayo Hotel. All physicians, except those outside the state and visiting guests, must hold membership receipts for the year 1937 before registering. Please attend to this, if you are not in good standing, by seeing your County Secretary at once.

Woman's Auxiliary—The Woman's Auxiliary of the Oklahoma State Medical Association extends a cordial invitation to the women visitors at the State Meeting in Tulsa, May 10, 11, 12, 1937, to attend the meetings and entertainment provided for women during the meeting. Registration will be held on the Lobby Floor, Mayo Hotel. (Complete program found on pages 133 and 134.)

Guests of Honor—DR. CHARLES A. ELLIOTT, Chicago; DR. THOMAS PARRAN, Surgeon General, U. S. Public Health Service, Washington, D. C.; DR. J. S. SPEED, Campbell Clinic, Memphis, Tenn.; DR. OLIN WEST, Secretary American Medical Association, Chicago.

Council—The Council will meet at 3:00 p. m. Monday, May 10th, in the Lounge Room, Sixteenth Floor, for the transaction of business affairs and thereafter on call of the President.

House of Delegates—Will meet at 8:00 p. m., Monday, May 10th, Junior Ball Room, Mezzanine Floor, and 8:00 a. m., Tuesday, May 11th, same place.

General Sessions—Will be held, beginning at 10:00 a. m., Tuesday, May 11th, and Wednesday, May 12th, in the Crystal Ball Room, Sixteenth Floor.

COMMITTEES IN CHARGE

A. W. PIGFORD, General Chairman

Registration and Badges and Finances—D. V. HUDSON, Chairman, S. C. SHEPARD, M. J. SEARLE.

Entertainment—MARCELLA STEEL RUPRECHT, Chairman, MOLLIE MCQUAKER, LUVERN HAYS, MARGARET C. HUDSON, BERTHA MARGOLIN, MARY EDNA SIPPLE, MABLE M. HART.

Hotels—NED R. SMITH, Chairman.

Golf—SILAS MURRAY, Chairman, P. P. NESBITT, CHARLES J. WOODS.

Scientific Exhibits—W. S. LARRABEE, Tulsa, Chairman; W. E. EASTLAND, Medical Arts Building, Oklahoma City; R. B. GIBSON, Ponca City.

Publicity—CHARLES HARRALSON, Chairman, GIFFORD N. HENRY, HUGH PERRY.

Medical Reserve Corps Dinner—BERNARD L. BRANLEY, Chairman.

WOMAN'S AUXILIARY

Registration on Lobby Floor, Mayo Hotel.

MONDAY, MAY 10TH

12:00 A. M.—Luncheon, Mayo Hotel, for Executive Board Members.

2:00 P. M.—Study Conference, Junior Ball Room, Mezzanine Floor.

Round Table Discussion of Auxiliary Work.

"How the Woman's Auxiliary Can Serve the Medical Profession"—SAM A. McKEEL, President-Elect, Oklahoma State Medical Association.

6:30 P. M.—Dinner, Tulsa Club.

Talk—MRS. FRANK HAGGARD, President of the Woman's Auxiliary to the Southern Medical Association. Fashion Show.

TUESDAY, MAY 11TH

10:00 A. M.—General Business Session.

Report of Counties.

Talk—GEO. R. OSBORN, President,
Oklahoma State Medical Association.

1:30 P. M.—Luncheon, Mayo Hotel.

Talk—MRS. ROBERT E. FITZGERALD,
President, Woman's Auxiliary to the
American Medical Association.

SECTIONS

All Sections will meet at 1:30 p. m.,
Tuesday, May 11th, and at the same hour
on Wednesday, May 12th. Meeting places
will be as follows:

Surgery—Crystal Ball Room, Sixteenth
Floor.

Medicine—Junior Ball Room, Mezzanine
Floor.

Eye, Ear, Nose and Throat—Main Pri-
vate Dining Room, Mezzanine Floor.

Obstetrics and Pediatrics—Open Parlor,
Mezzanine Floor.

Genito-Urinary Diseases and Syphilology—Lounge Room, Sixteenth Floor.

Dermatology and Radiology—Room B,
Mezzanine Floor.

GENERAL SCIENTIFIC SECTION

Clinics held at Tulsa hospitals from 8 to
10 a. m. Clinic schedule for Tuesday found
on page 137.

General Scientific Sections will be held,
beginning at 10:00 a. m., in the Crystal
Ball Room, Sixteenth Floor.

TUESDAY, MAY 11TH

10:00 to 10:40 A. M.—“*Present Status of
Fractures of the Neck of the Femur*”—J. S. SPEED, Campbell Clinic,
Memphis, Tenn.

10:40 to 11:20 A. M.—“*Management of
Cardiovascular Disease*”—CHAS. A.
ELLIOTT, Chicago.

11:20 to 12:00 A. M.—“*Organized Medi-
cine*”—OLIN WEST, Secretary, Amer-
ican Medical Association, Chicago.

SECTION ON GENERAL SURGERY

Crystal Ball Room, Sixteenth Floor

Chairman—G. E. STANBRO, Oklahoma City.

Vice-Chairman—S. E. KERNODLE, Oklaho-
ma City.

Secretary—H. M. McCLURE, Chickasha.

TUESDAY, MAY 11TH

1:30 P. M.

“*Pediatric Surgery*”—G. E. STANBRO, Okla-
homa City.

“*Congenital Abnormalities of Face and
Mouth*”—GEO. KIMBALL, Oklahoma City.

“*Pyloric Stenosis*”—FRED A. GLASS, Tulsa.

“*Appendicitis in Children*”—MAURICE J.
SEARLE, Tulsa.

“*Urology in Children*”—E. HALSELL FITE,
Muskogee.

SECTION ON GENERAL MEDICINE

Junior Ball Room, Mezzanine Floor.

Chairman—E. H. SHULLER, McAlester.

Vice-Chairman—L. C. MCHENRY, Oklaho-
ma City.

Secretary—ARTHUR H. DAVIS, Tulsa.

TUESDAY, MAY 11TH

1:30 P. M.

“*Undulant Fever in General Practice*”—E.
H. SHULLER, McAlester.

“*Undulant Fever in Chronic Arthritis—
Their Inter-Relationship*”—E. GOLDFAIN,
Oklahoma City.

“*The Management of Edema*”—CHAS. A.
ELLIOTT, Chicago.

“*The Use of Protamine Insulin*”—BERT F.
KELTZ, Oklahoma City.

“*Food Allergy With Special Reference to
the Diagnostic Value to the Leukopenic
Index*”—RAY M. BALYEAT, Oklahoma
City.

“*Anemia in General Practice*”—H. K.
SPEED, JR., Sayre.

SECTION ON EYE, EAR, NOSE AND THROAT

Main Private Dining Room, Mezzanine
Floor.

Chairman—H. F. VANDEVER, Enid.

Vice-Chairman—L. C. MCHENRY, Oklaho-
ma City.

Secretary—ARTHUR H. DAVIS, Tulsa.

TUESDAY, MAY 11TH

1:30 P. M.

“*Surgical Treatment for Ectropion and*

Entropion—C. B. BARKER, Guthrie. Discussed by J. R. REED, Oklahoma City.

"Diagnosis of Non-Opaque Foreign Body in the Lung"—MILLARD F. ARBUCKLE, St. Louis, Mo.

"Tuberculosis of the Throat, Review of Six Cases"—HUGH EVANS, Tulsa. Discussed by CHESTER MCHENRY, Oklahoma City.

"Ocular Muscle Imbalance Following Head Injuries"—D. L. EDWARDS, Tulsa. Discussed by A. S. PIPER, Enid.

"Diagnosis and Treatment of Maxillary Sinusitis"—W. L. ALSPACH, Tulsa. Discussed by W. O. SMITH, Tulsa.

"Mastoid Disease"—WELBORN W. SANGER, Ponca City. Discussed by ALBERT COOK, Tulsa.

SECTION ON OBSTETRICS AND PEDIATRICS

Open Parlor, Mezzanine Floor.

Chairman—GEO. H. GARRISON, Oklahoma City.

Vice-Chairman—M. B. GLISMANN, Okmulgee.

Secretary—C. W. ARRENDELL, Ponca City.

TUESDAY, MAY 11TH
1:30 P. M.

Chairman's Address—GEO. H. GARRISON, Oklahoma City.

"Vitamin A Deficiency in Pregnancy Associated with Congenital Defects"—G. R. RUSSELL, Tulsa. Discussed by W. M. TAYLOR, Oklahoma City.

"Relative Value of Various Methods of Diphtheria Immunization"—D. J. UNDERWOOD, Tulsa. Discussed by C. M. POUNDERS, Oklahoma City.

"Potassium Cyanide Poisoning with Recovery (Case Report)"—F. S. ETTER, Bartlesville. Discussed by GEORGE FELTS, Oklahoma City.

"The Use of Hydrochloric Acid in the Treatment of Asthma in Children"—JOHN R. COTTERAL, Henryetta. Discussed by C. E. BRADLEY, Tulsa.

SECTION ON GENITO-URINARY DISEASES AND SYPHILOLOGY

Lounge Room, Sixteenth Floor.

Chairman—HALSELL FITE, Muskogee.

Vice-Chairman—A. R. RUSSELL, McAlester.

Secretary—C. B. TAYLOR, Oklahoma City.

TUESDAY, MAY 11TH
1:30 P. M.

"Some Remarks on Prostatic Resection"—E. HALSELL FITE, Muskogee.

"Low Back Pain in Relation to Urology"—STANLEY F. WILDMAN, Oklahoma City.

"Treatment of Urethral Fistula"—BASIL A. HAYES, Oklahoma City.

"Considerations of the Varied Symptomatology of the Prostate and Verumontanum"—ALLEN R. RUSSELL, McAlester.

"Clinical Study of Renal Tuberculosis"—DONALD W. BRANHAM, Oklahoma City.

"Further Experience with Prostatic Resection"—HENRY S. BROWNE, Tulsa.

"Cardiovascular Syphilis"—F. REDDING HOOD, Oklahoma City.

SECTION ON DERMATOLOGY AND RADIOLOGY

Room B, Mezzanine Floor.

Chairman—C. P. BONDURANT, Oklahoma City.

Vice-Chairman—JAMES STEVENSON, Tulsa.

Secretary—PAUL B. CHAMPLIN, Enid.

TUESDAY, MAY 11TH
1:30 P. M.

Chairman's Address—"Clinical Serology of Syphilis"—C. P. BONDURANT, Oklahoma City.

"Lymphogranuloma Inguinale"—J. V. VAN CLEVE, Wichita. Discussion by M. O. NELSON, Tulsa.

"Infantile Eczema"—HERVEY A. FOERSTER, Oklahoma City. Discussion by W. A. SHOWMAN, Tulsa.

"Carcinoma Cervix Uteri"—RALPH MEYERS, Oklahoma City. Discussion by PAUL B. CHAMPLIN, Enid.

"Common Diseases of the Nails"—JOHN H. LAMB, Oklahoma City. Discussion by J. F. CAMPBELL, Muskogee.

"Radiological Aid in Diagnosis of Pulmonary Disease"—JOHN HEATLEY, Oklahoma City. Discussion by MORRIS B. LHEVINE, Tulsa.

"Lichen Planus"—J. H. STEVENSON, Tulsa. Discussion by CARL BRUNDAGE, Oklahoma City.

GENERAL MEETING

TUESDAY, MAY 11TH
8:00 P. M.

Junior Ball Room, Mezzanine Floor,
Mayo Hotel.

A. W. PIGFORD, *General Chairman*, Pre-
siding

Invocation—REV. C. W. KERR, Tulsa.

Vocal Solo—MRS. THERESA FRO GRIMES,
Tulsa.

Introduction of Guests—A. W. PIGFORD,
Tulsa.

Address of Welcome—DR. T. A. PENNY,
Mayor, Tulsa. JAS. STEVENSON, President,
Tulsa County Medical Society.

Repsonse—SHADE D. NEELY, Muskogee.

Violin Solo—MRS. G. GARABEDIAN, Tulsa.

Introduction of President-Elect—GEO. R.
OSBORN, Tulsa, Retiring President.

President's Address—SAM A. McKEEL,
Ada.

9:30 P. M.

President's Reception and Dance—Crystal
Ball Room, Sixteenth Floor, Mayo Hotel.

GENERAL SCIENTIFIC SECTION

Clinics held at Tulsa hospitals from 8 to
10 a. m. Clinic schedule for Wednesday,
May 12th, found on page 137.

General Scientific Sections will be held,
beginning at 10:00 a. m., in the Crystal
Ball Room, Sixteenth Floor.

WEDNESDAY, MAY 12TH

10:00 to 10:40 A. M.—“*Syphilis Control*”
—THOMAS PARRAN, U. S. Public
Health Service, Washington, D. C.

10:40 to 11:20 A. M.—“*Fractures of the
Forearm*”—J. S. SPEED, Memphis,
Tenn.

11:20 to 12:00 A. M.—“*Management of
Hepatic Disease*”—CHAS. A. ELLIOTT,
Chicago.

SECTION ON GENERAL SURGERY

Crystal Ball Room, Sixteenth Floor.

WEDNESDAY, MAY 12TH

1:30 P. M.

“*Tumors of Jaw*”—JOHN F. BURTON, Okla-
homa City.

Election of Officers.

“*Procidencia, with Retrocele and Cysto-
cele*”—M. E. STOUT, Oklahoma City.

“*Ectopic Pregnancy*”—H. G. CRAWFORD,
Bartlesville.

“*Infections of the Hand*”—THOMAS LYNCH,
Tulsa.

SECTION ON GENERAL MEDICINE

Junior Ball Room, Mezzanine Floor.

WEDNESDAY, MAY 12TH

1:30 P. M.

“*Physical Examination in the Normal In-
dividual*”—S. C. SHEPARD, Tulsa.

Election of Officers.

“*Carcinoma of the Pancreas*”—ARTHUR W.
WHITE, Oklahoma City.

“*A Study of Lobar Pneumonia in the Tul-
sa Area*”—SAMUEL R. GOODMAN AND
FRANK NELSON, Tulsa.

“*Regimental Rationale in the Treatment
of Arthritis*”—WM. K. ISHMAEL, Oklaho-
ma City.

SECTION ON EYE, EAR, NOSE
THROAT

Main Private Dining Room, Mezzanine
Floor.

WEDNESDAY, MAY 12TH

1:30 P. M.

“*Malignancy of Antrum*”—MARVIN HEN-
LEY, Tulsa. Discussed by J. C. MACDON-
ALD, Oklahoma City.

Election of Officers.

“*Suspenopsia*”—CHARLES H. HARALSON,
Tulsa. Discussed by F. M. COOPER, Okla-
homa City.

“*Revamping the So-Called Unattractive
Nose*”—CURT VON WEDEL, Oklahoma City.
Discussed by H. P. PRICE, Tulsa.

“*Cross-Cylinder Tests*”—CHARLES K. MILLS,
McAlester. Discussed by WALTER A.
HUBER, Tulsa.

“*A Clinical Consideration of Labyrinthitis*”
—THEODORE G. WAILS, Oklahoma City.
Discussed by W. L. BONHAM, Oklahoma
City.

“*Ocular Malignancies, Report of Two
Cases*”—W. ALBERT COOK, Tulsa. Dis-
cussed by E. S. FERGUSON and LESLIE
WESTFALL, both of Oklahoma City.

SECTION ON GENITO-URINARY DISEASES AND SYPHILOLOGY

Lounge Room, Sixteenth Floor.

WEDNESDAY, MAY 12TH

1:30 P. M.

"Anemias of Pregnancy"—J. B. ESKRIDGE,
Oklahoma City. Discussed by W. A.
DEAN, Tulsa.

Election of Officers.

"Prevalence of Syphilis in Obstetrics Prac-
tice"—L. G. NEAL, Ponca City. Discussed
by DICK LOWRY, Oklahoma City.

"Placenta Previa, with Discussion of an
X-ray Diagnostic Aid"—W. W. WELLS,
Oklahoma City. Discussed by H. M. Mc-
CLURE, Chickasha.

"Local Anesthesia in Obstetrics"—GERALD
ROGERS, Oklahoma City. Discussed by
F. D. SINCLAIR, Tulsa.

"Post-Partum Care"—CHAS. ED WHITE,
Muskogee. Discussed by E. E. BEECH-
WOOD, Bartlesville.

"Abortion—A National Health Problem"—
GERTRUDE NIELSEN, Oklahoma City. Dis-
cussed by PIERRE CHARBONNET, Tulsa.

CLINICS

OPERATIVE CLINIC

Flower Hospital

TUESDAY, MAY 11TH

8:00 A. M.—*Laparotomy*—ROY SMITH.

OPERATIVE CLINIC

Tulsa General Hospital

TUESDAY, MAY 11TH

8:00 A. M.—*Pelvic Sympathectomy for
Dysmenorrhea*—B. WARD.

9:00 A. M.—*Hysterectomy*—S. J. BRAD-
FIELD.

OPERATIVE CLINIC

Sisler Hospital

TUESDAY, MAY 11TH

8:00 A. M.—*Stabilization of Foot for Pol-
iomyelitis Deformity.
Osteomyelitis of Tibia.*

OPERATIVE CLINIC

Morningside Hospital

TUESDAY, MAY 11TH

8:00 A. M.—*Cholecystectomy*—A. RAY
WILEY.

Intestinal Resection—ROGER ATCHLEY.

Mastoidectomy—JOHN GORRELL.

9:00 A. M.—*Osteomyelitis*—IAN MACKEN-
ZIE.

Cataract—ALBERT ROTH.

Cystoscopic Examination—JOE
FULCHER.

Tonsillectomy—RURIC SMITH.

DRY CLINIC

St. John's Hospital

TUESDAY, MAY 11TH

8:00 A. M.—*Discussion of Terminal Ileitis*
—S. C. SHEPARD.

8:15 A. M.—*Interesting Clinical Aspects
in the Treatment of Epidemic Cere-
bro-spinal Meningitis*—S. GOODMAN,
F. J. NELSON.

8:30 A. M.—*Case Presentation of Internal
Fixation of Fracture of the Hip*—J.
E. McDONALD, F. A. STUART.

9:00 A. M.—*Treatment of Some of the
More Common Infections with X-ray
Therapy*—L. H. STUART.

DRY CLINIC

Morningside Hospital

TUESDAY, MAY 11TH

8:00 A. M.—*The Function of Uteral Sacro-
ligaments in Uteral Suspension*—L.
A. McCOMB.

8:15 A. M.—*Differential Diagnosis of Si-
nus Infection (Use of Lipiodal)*—C.
A. PAVY.

8:30 A. M.—*Use of Radium in Oral Le-
sions*—RALPH A. MCGILL.

8:45 A. M.—*The Management of Breast
Malignancies*—A. RAY WILEY.

9:00 A. M.—*The Value of Leukopenic In-
dex in Allergic Diseases.*—E. RAN-
KIN DENNY.

9:15 A. M.—*Foreign Bodies in the Blad-
der*—JOSEPH FULCHER.

OPERATIVE CLINIC

Flower Hospital

WEDNESDAY, MAY 12TH

8:00 A. M.—*Laparotomy*—L. C. NORTHRUP.

OPERATIVE CLINIC

Tulsa General Hospital

WEDNESDAY, MAY 12TH

8:00 A. M.—*Cholecystostomy*—G. H. MILLER.9:00 A. M.—*The Legal Aspects of a Surgical Operation (Masculine)*—M. M. HART.

OPERATIVE CLINIC

Sisler Hospital

WEDNESDAY, MAY 12TH

8:00 A. M.—*Albee Spinal Bone Graft.*
Operative Treatment of Club Foot.

OPERATIVE CLINIC

Morningside Hospital

WEDNESDAY, MAY 12TH

8:00 A. M.—*Gastro-enterostomy*—MORTIMER HOUSER.*Hysterectomy*—HARRY MCGUIRE.*Tonsillectomy*—HUGH EVANS.*Cholecystectomy*—A. B. CARNEY.9:00 A. M. — *Thyroidectomy* — JAMES BROGDEN.*"Club Feet"*—FRANK STUART.*Cataract*—ALBERT COOK.*Phrenicectomy*—ROY M. SHEPARD.*Fistulectomy and Hemorrhoidectomy*
—VICTOR ALLEN.

DRY CLINIC

St. John's Hospital

WEDNESDAY, MAY 12TH

8:00 A. M.—*Cancerous and Precancerous Lesions of the Skin*—W. A. SHOWMAN.8:30 A. M.—*New Refinements and Developments of Clinical Pathology for the Clinician*—I. A. NELSON.9:00 A. M.—*Important Factors in Treat-**ing Coronary Diseases*—R. C. PIGFORD.

OPERATIVE CLINIC

St. John's Hospital

WEDNESDAY, MAY 12TH

8:00 A. M. — *Prostatic Resection* — MALCOLM MCKELLAR.*Blood Transfusion, Vincent Tube Method*—OWEN ROYCE.*Mastectomy*—PAUL GROSSHART.*Tonsillectomy*—J. C. BRASSWELL.*Caldwell-Luc*—A. H. DAVIS.*Advancement Eye Muscle*—C. H. HARALSON.9:00 A. M. — *Gastro-enterostomy* — D. L. GARRETT.*Thyroidectomy*—F. A. GLASS.*Submucous Resection*—W. O. SMITH.*Plastic Surgery: Eye*—D. L. EDWARDS.*Anastomosis: Intestinal*—CARL HOTZ.*Appendectomy*—C. C. HOKE.

OPERATIVE CLINIC

St. John's Hospital

WEDNESDAY, MAY 12TH

8:00 A. M. — *Prostatic Resection* — H. S. BROWNE.*Cataract Surgery*—C. H. HARALSON.*Perineal and Cervical Repair*—CARL HOTZ.*Thyroidectomy*—C. C. HOKE.9:00 A. M.—*Presacral Sympathectomy* — D. L. GARRETT.*Herniotomy*—F. L. FLACK.*Suspension Uterus*—N. S. WHITE.*Skin Graft*—F. A. GLASS.*Electro-Surgery of the Cervix*—P. N. CHARBONNET.

DRY CLINIC

Morningside Hospital

WEDNESDAY, MAY 12TH

8:00 A. M.—*Blood Dyscrasies*—H. S. NAUHEIM.8:15 A. M.—*Cyclopropane*—L. C. PRESSON.

- 8:30 A. M. — *Neurodermatitis* — HARRY GREEN.
- 8:45 A. M.—*Pneumonia in Infants* — L. HAYS.
- 9:00 A. M.—*Cholecystectomy, with Special Attention to Common Duct Surgery*—ANDRE B. CARNEY.
- 9:15 A. M. — *Post-Operative Psychosis* — N. R. SMITH.

THE OKLAHOMA PEDIATRIC SOCIETY

President—BEN H. NICHOLSON, Oklahoma City.

Secretary-Treasurer — HUGH C. GRAHAM, Oklahoma City.

MONDAY, MAY 10TH, AT ADAMS HOTEL

- 6:30 P. M.—Dinner.
- 7:30 P. M.—Address by ETHEL DUNHAM, Children's Bureau, Washington, D.C.
- 8:00 P. M.—Round Table Conference on "*Economic Problems in Pediatrics.*"
Chairman: A. L. SALOMON, Oklahoma City; Assistants: JULIAN FEILD, Enid; C. W. ARRENDELL, Ponca City; A. A. WALKER, Wewoka; G. R. RUSSELL, Tulsa.

TUESDAY, MAY 11TH, AT MAYO HOTEL

- 9:00 A. M.—"*Congenital Balloon Cysts of the Lung*"—TOM LOWERY, Oklahoma City. Discussion opened by FRANK LATIMORE, Kingfisher; J. C. JACOBS, Miami; and RALPH BOWEN, Oklahoma City.
- 9:30 A. M. — "*Sinusitis in Children*" — HUGH J. EVANS, Tulsa. Discussion opened by D. A. ANGUS, Lawton; CATHERINE BRYDIA, Ada; and J. L. LEHEW, Guthrie.
- 10:00 A. M.—*The President's Address.*
Business Session—Election of Officers.
- 10:30 A. M.—"*The Nervous Child*"—CARROLL M. POUNDERS, Oklahoma City. Discussion opened by JOHN R. CALLAWAY, Pauls Valley; C. V. RICE, Muskogee; and W. M. TAYLOR, Oklahoma City.
- 11:00 A. M.—"*The Treatment of Laryngeal Diphtheria*" — HUGH MONROE,

Lindsay. Discussion opened by P. J. DEVANNEY, Sayre; ROY EMANUEL, Chickasha; and DARWIN B. CHILDS, Tulsa.

- 11:30 A. M.—"*The Foot of the Child*"—J. S. SPEED, Memphis, Tenn.

COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of The Journal preceding the Annual Session.

1937 Report of Committee on Post-Graduate Medical Teaching

Due to the lack of funds, there have been no post graduate courses given during the past year. Your Committee has believed for some time that, since the courses were discontinued by the University, additional outside funds would be necessary to carry on this work satisfactorily. Upon investigation it was found that certain foundations were giving financial aid to some of the states for post-graduate medical teaching. In one particular state the foundation donated \$12,000.00 for one year's instruction, with the stipulation that the State Medical Association and State Board of Health donate an additional \$2,000.00 each. The foundation officials do not place any restrictions on how the funds shall be spent, but do insist that the State Medical Association assume complete supervision in the outlining of the program, hiring of personnel, and expenditures of funds.

Your Committee, therefore, wishes to apply to this foundation for funds, and requests the House of Delegates to pass a resolution giving us authority to represent the Association and to vote \$2,000.00 as the Association's contribution to the program.

The State Commissioner of Health, Dr. Pearce, has advised us verbally of his desire to cooperate with us in this program.

Respectfully submitted,

Henry H. Turner, Chairman
H. C. Weber
Walter Hardy.

Report of Committee on Control and Study of Cancer

The profession and the lay public has a growing interest in the dissemination of FACTS about cancer. This is our weapon to overcome superstition and fear, based upon false ideas and impressions. Authentic information is the only present means of undermining the "quack cancer cures" which do so much harm. Doctors appreciate certain discouraging features about cancer, but the average physician has little idea of the hopelessness entertained by the average lay individual about cancer. The facts are an illuminating encouragement to most, especially as to early cases.

A subject of such vital interest is necessarily widely discussed and it is our opinion that it is the duty of the profession to provide accurate information in order to prevent the dangerous consequences resulting from the false claims and the erroneous reasoning of certain lay minds.

Your committee endorses all proper means of "factual" education about cancer, provided certain requirements are met. (1) Absolute control by

the medical profession is an essential requisite in any educational campaign about cancer. Only thus can accurate, truthful information be obtained devoid of enthusiastic false statements which eventually destroy the original purpose. (2) The local medical unit (state, district or county) should have absolute control in its own territory, making use of the organization, information, speakers, literature and films of the central organization as they think wise or adaptable in their locality. Your committee has on all occasions demanded these requirements which may explain the somewhat slow but steady progress in Oklahoma.

WOMEN'S FIELD ARMY

Your committee endorses this splendid movement. The American Society for the Control of Cancer, in conjunction with the American Federation of Women's Clubs (2,000,000 members) has launched the Women's Field Army "to build, throughout the country, an enlightened lay group through dissemination of sound, conservative material on the methods of cancer control."

"Each woman who enlists as a recruit will contribute one dollar to the Cancer War Chest—men, too, may support the movement as contributing members. Thus thousands of dollars will be available to carry on vital educational work. Of this total, seven-tenths will be spent where it is raised by the State Executive Committees of the Army. One-tenth will be placed in a contingent fund and the rest will be used by the General Staff in the national office of the American Society for the Control of Cancer for its field work."

The central organization is directed by the American Society for the Control of Cancer, twenty-six of whose twenty-nine directors are prominent doctors. In each state a State Commander is selected by the State Federation of Women's Clubs and she is to complete the organization through the district and local county units. This state women's organization is under the complete direction of the State Executive Committee, which is the cancer committee of the State Medical Association, a provision your committee has required. When organization is completed in Oklahoma a similar control over the local organization will be placed in the hands of the County Medical Societies, a policy your committee has always held in any cancer educational work in a community.

"Non-medical men and women may be useful in pushing the Women's Field Army, BUT THE MEDICAL EDUCATIONAL SPEECHES MUST BE BY PHYSICIANS." It, therefore, falls upon the profession to control the course of the Women's Field Army and also to furnish able speakers and educational films as needed.

This organization offers an excellent opportunity for the medical profession to supply accurate, competent information. As doctors it is our duty to do all that we can, rather than complain about the sensational, horrifying, unsound information that reaches the public through uncontrolled lay channels.

Unfortunately (at the time of writing) no state commander has been selected from the State Federation of Women's Clubs in Oklahoma and there has been no organization in our state. This is due to certain misunderstandings between the central organization and the officers of the State Federation of Women's Clubs, and to no lack of enthusiasm on their part. An appointment should soon be made. However, the organization of the State Women's Field Army will necessarily be slowly built if it is to be carefully done and our state will not be able to share in the present national drive.

Your committee recommends organization work during the spring and summer with intensive activity in the fall and winter.

COMMITTEE ACTIVITY

Since our last report, numerous meetings, clinics and lectures have been sponsored by the local county societies. Your committee has always been available for assistance and advice in these undertakings.

We are indebted to the American Society for the Control of Cancer for invaluable assistance. It has furnished literature, films, projection equipment and newspaper releases. This material has been used freely by the county societies and they are urged to continue to take advantage of this opportunity.

RECOMMENDATIONS

1. If the work of the committee is to be done properly, an appropriation should be made for clerical work and small organization expenses. It is recommended that not less than two hundred and fifty dollars be allotted the committee for this purpose. Mr. L. W. Kibler formerly did most of this work through the Public Relations Department of the State University, but he is now employed by the Tennessee Medical Association in their medical extension activity.

2. We feel that this committee should cooperate with the American Society for the Control of Cancer, which is the only sound national organization for the purpose of education about cancer. In this direction, the state chairman of the American Society for the Control of Cancer should be a minority member of this committee.

3. We recommend full cooperation of the profession with the Women's Field Army under the provisions outlined above.

Wendell Long, Chairman
E. S. Lain
Paul Champlin.

Report of the Committee on Industrial Service and Traumatic Surgery

We, the Committee on Industrial Service and Traumatic Surgery, wish to make the following report:

The diversity of opinion relative to the evaluation of percentage of permanent disability in compensable accident cases is a rather deplorable situation. Doctors representing individuals value their percentage of disability very highly, while those representing the respondent evaluate them much lower. This makes rather a farce of many of our hearings before the Industrial Commission and your committee wishes to recommend that those evaluating such permanent disability should adhere to some fixed rule and make these evaluations with some degree of accuracy.

There are at this time texts which make this phase of industrial work much more accurate and certain and these texts should be freely used before testimony is presented to the Industrial Commission.

We wish to commend the Governor of the State on the appointment of a regular practicing physician and surgeon as a member of the State Industrial Commission and would recommend that in future appointments the Governor select such members from a list of names presented by the State Medical Association. This recommendation, however, to reflect in no way upon the ability of the present appointee, but we feel it would be

safer if the State Medical Association had something to do with the selection.

The work of the Fracture Committee of the American College of Surgeons in the developing of highway first aid stations is certainly commendable and the establishment of these stations has been taken over by the American Red Cross. The attendants of the stations first receiving instructions in first aid treatment and passing a satisfactory examination before they are certified.

In some counties of Oklahoma this work has been initiated but in many counties nothing has been done along this line and we recommend that an organized effort be made to place first aid stations along the highways where hospitals are not readily accessible. We also recommend that first aid instructions be extended to ambulance drivers, police and fire departments and others apt to come in contact with this class of injuries.

The immediate or first aid treatment of traumatic cases should be emphasized in the programs prepared for County Medical Societies as with the increase in highway traffic many of these cases occur in rural communities and are first treated by the general practitioner and he should be thoroughly conversant with their proper treatment. Especially is this so relative to fractures, head and abdominal injuries.

We would recommend to our successors upon this committee that they set up the machinery for the carrying out of the above suggestions.

Respectfully submitted,

John F. Park, Chairman.
Earl D. McBride
George S. Baxter.

Report of the Committee on Medical Economics

We, the undersigned committee on Medical Economics wish to submit to the honorable president of the State Medical Association the following report:

1. A study of the medical phase of the present unsolved economic situation is a difficult one and requires a great deal of time and considerable financial resource to accomplish definite objectives, hence, your committee has not ventured far into new fields, but will report observations within our state.

2. The increased rate of free-flow money in our economic channels, the evidence of which we see around us daily, will probably lighten the economic worries of the physician within the low income class and enlighten the profession on the true meaning of the present economic disturbances in the medical arts. This hoped for result has, during the past year, showed definite signs and symptoms of being accomplished.

3. The activities of the publicity and legislative committee in promoting the basic science bill are making a definite step to solve certain phases of economic distress.

4. The federal government's effort in this state to establish a low cost fee for those sharing in government bounty was proposed during the year and used in many districts. Your committee has not a reliable and comprehensive report of how this is working.

5. In Oklahoma County during the past year the county society has had a full time salaried secretary who was operating the Medical Service Bureau for the adjustment and collection of fees in the low income groups. And while it has caused our county society dues to be a little higher it impresses most of us as a serviceable work of the society to the community.

6. The contract corporation group that threatened the people and harmony of practice in Oklahoma County has been retreating during the past year, and while they still operate their hospital, they have changed their basic contracts.

7. The committee feels that a word of commendation should be extended to the State Commissioner of Health, Dr. Pearce, for conducting his "Anti-Syphilis" campaign in this state mainly through the County Medical Association, where proper cooperation is given. The committee would further urge that the state society recommend county medical societies to take over this work under Dr. Pearce's plan.

The above are unanimously approved by the committee and signed by the same and hereby respectfully submitted.

J. T. Martin, Chairman
R. M. Shepard
Ben H. Cooley.

Report of the Committee on Public Relations and Legislation

We, the Committee on Public Relations and Legislation, appointed at the Enid meeting in 1936, hereby submit the following report:

We have obtained the services of Mr. Jess B. Harper as an all-time executive secretary, and rented and equipped an office in 601 Ramsey Tower Building, Oklahoma City. He has been on the job since September 1, 1936.

We have caused to be introduced into the legislature a Basic Science Bill, which has passed the Senate by a good majority, and we feel like it will be passed by the House by the time the month of March has passed, and we hope to get a big enough majority in the House to attach the emergency to it.

We have caused to be introduced into the legislature several amendments to the Medical Practice Act that we hope to pass in this legislature. We have also caused to be introduced into the House a Registration Law, requiring all M. D.'s of the state to pay a \$2.00 registration fee, the proceeds to be paid into the state treasury to be used to enforce the Medical Practice Act.

The committee has been quite active, and has spent more money by far than has been available out of the regular funds. But we have done the best we could under the conditions and sincerely hope that it will meet with your approval. We will continue to do our duty as we see it until the Tulsa meeting, at which time we will present a more detailed and we hope a more satisfactory report.

Very truly yours,

H. K. Speed, Chairman
C. B. Barker
McLain Rogers.

For Whose Benefit?

Every proposal for change in medicine should be tested with the question "For whose benefit?" Unless the change will help, either directly or indirectly, in the fight against disease and death, it cannot be justified. The fact that it may increase the income of physicians, help pay the interest on hospital investment, or provide salaries for a body of administrators, unless it will also improve medical service, is no justification. This is a simple test, but applied strictly to many of the proposals for medical changes before the public at the present time it would elicit a verdict of condemnation. —Journal A. M. A., February 20, 1937.

ANNUAL REPORT of the Secretary-Treasurer-Editor

March 1, 1936, to March 31, 1937

TO ALL MEMBERS OF THE OKLAHOMA
STATE MEDICAL ASSOCIATION:

In conformity with the Constitution and By-Laws, I hereby submit to the Council and through them to the membership a report of the various transactions of my office during the past thirteen months:

Detailed statements for all financial transactions, duplicate deposit certificates and other business matters I hereby submit for audit by the Council.

MEMBERSHIP: On February 29, 1936, we had 1333 members, and these were increased to 1552 for the year 1936. Our membership at the time of this audit is 1350, which is good indeed considering the increase in the amount of dues.

DEATH OF PHYSICIANS: The list of physicians who have died during the past year will be found in the report of the Committee on Necrology which will be published with the report of the transactions of the House of Delegates.

MEDICAL DEFENSE: The following cases have either been settled, dropped or disposed of in the following manner:

Settled: Comanche County, No. _____
LeFlore County, No. _____
Pittsburg County, No. _____

Pending: Caddo County, No. 9407.
Carter County, No. 16262.
Choctaw County, No. 8644.
Logan County, No. 1693.
Mayes County, No. _____
Pottawatomie County, No. 6064.

In addition to the above the following cases are now pending, the progress and status of which is unknown as they are pending or dormant in the courts:

Blaine County, No. _____
Carter County, No. _____
Craig County, No. _____
Hughes County, No. _____
Payne County, No. _____
Pottawatomie County, No. _____

We have been able in the past year to retain an increase in the amount of national advertising, our Journal receiving the best of service from the Cooperative Medical Advertising Bureau. Some of you may wonder why certain large houses do not patronize The Journal, and it is probably due to the fact that they have no Council Approved products and we cannot accept their advertising. It is well for the individual physician to question the detail man relative to his products if you do not see their advertising in your State Journal. Just ask him if his products are Council Approved.

The Journal during the past year has maintained its usual size and the scientific material has been of the usual high standard. We have continued our abstract department as we feel that is one of the best services we can give our readers. Every subscriber should appreciate the laborious service being rendered by those who furnish our abstracts. The very best material is abstracted and done in a very commendable manner.

The Legislative Committee has been very active during the past year and their report is published in this issue together with a supplementary report, which will be given to the House of Delegates and which will be of great interest.

The Council has been furnished with a schedule of Bills Receivable but it is probably not advisable that they be published.

THE FIRST NATIONAL BANK
McAlester, Oklahoma
April 5th, 1937

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma.

Dear Dr. Willour:

This is to certify that according to our records the following accounts reflected a credit balance, subject to check, at the close of business March 31st, 1937, as follows:

Oklahoma State Medical Association:

General Fund	\$4,792.60
Medical Defense Fund	1,494.75
Legislative Fund	794.03

It is further certified that the following direct obligations of the Oklahoma State Medical Association were owing to the First National Bank, McAlester, Oklahoma, at the close of business on March 31st, 1937, as follows:

Date of Note	Description of Collateral	Date Due	Amount
Feb. 23, 1937	Unsecured	May 23, 1937	\$2,000.00
Feb. 12, 1937	3 1/4 % U. S. Treasury Bond of 1944- 46 No. 95099K	April 10, 1937	1,000.00
Feb. 18, 1937	3 1/4 % U. S. Treasury Bonds of 1944-46 Nos. 94180L, 94- 181A, 2 at \$500.00; and 3 1/4 % U. S. Treasury Bonds of 1943-45 Nos. 878J, 879K, 880L, 3 at \$1,000.00	April 10, 1937	4,000.00
TOTAL			\$7,000.00

Yours very truly,
J. K. PEMBERTON,
Vice-President and Cashier.

AUDIT REPORT

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma

For Period February 29, 1936, to March 31, 1937
By J. K. Pemberton, McAlester, Oklahoma
April 5th, 1937.

Dr. George R. Osborn, President,
Oklahoma State Medical Association,
Tulsa, Oklahoma.

Dear Dr. Osborn:

Upon request, I have audited the books of account, records and investments of

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma,

for the period beginning February 29th, 1936, and ending March 31st, 1937, and submit the following schedules, together with comments and supporting exhibits.

Cash receipts were traced into the bank through a detailed check of items received, against deposit tickets as shown in the files of the bank. Cash expenditures and disbursements were checked against bank records, all vouchers and checks were examined and compared with the original entries; endorsements scrutinized and found to be in order.

In company with Dr. L. S. Willour, Secretary-Treasurer, I have examined the following investments which are kept in a safety deposit box in the First National Bank, McAlester, Oklahoma, which box is registered in the name of the Oklahoma State Medical Association; except at this date the bonds are held by the bank as collateral to a loan totaling \$5,000.00 executed by the Oklahoma Medical Association:

GENERAL FUND:

3 1/4 % U. S. Treasury Bonds of 1944-46—

Bond No.	Par Value	
94180L	\$ 500.00	
94181A	500.00	
95099K	1,000.00	\$2,000.00

MEDICAL DEFENSE FUND:

3 1/4 % U. S. Treasury Bonds of 1943:45—

Bond No.	Par Value	
878J	\$1,000.00	
897K	1,000.00	
880L	1,000.00	\$3,000.00

All April 15th, 1937, and subsequent coupons are attached to the entire total of \$5,000.00 bonds. I find that all coupons clipped from the above bonds during the period covered by this audit, have been properly accounted for in their respective amounts.

The books of the Association are kept on an actual cash receipts and disbursements basis, and for that reason accrued items are not included in the audit, however upon investigation I find no unpaid or accrued accounts payable, all bills having been paid prior to the date of this audit; there are certain accounts receivable owing to the Association and a list or schedule in detail has been prepared showing these accounts and the amounts due, and is attached hereto and made part of the audit.

I find upon examination the following Notes Payable made and owing by the Association:

To the General Fund O. S. M. A.....	\$4,300.00
To the First National Bank, McAlester, Oklahoma (Unsecured)	2,000.00
To the First National Bank, McAlester, Oklahoma (Secured by the above described \$5,000.00 par value U. S. Treasury Bonds)	5,000.00

I further find that proper resolutions were passed authorizing the execution of said borrowings which are therefore in order, and constitute valid and binding obligations of the Oklahoma State Medical Association.

I respectfully submit the following Audit and Report for your information.

J. K. PEMBERTON, Auditor.

* * *

submitted as my report for the period from February 29th, 1936, to March 31, 1937.

L. S. WILLOUR, Secretary-Treasurer.

CASH RECEIPTS AND DISBURSEMENTS

February 29, 1936, to March 31, 1937

GENERAL FUND:

Balance \$ 5,404.87

RECEIPTS:

Advertising	\$ 5,742.04
Memberships	10,045.00
Transfer from Medical Defense Fund	1,000.00
Interest Received from U. S. Government Bonds	162.51
Repayment of Cash Advance at 2-29-36	70.00
Total Receipts	17,019.55
Total Cash to Account for	\$22,424.42

DISBURSEMENTS:

Dr. L. S. Willour—

Salary to 4-1-37 at \$200.00 per month \$ 2,800.00

Oltha Shelton—

Salary to 4-1-37 at \$125.00 per month 1,625.00

Other Office Salaries	25.00
Social Security Tax	9.75
Rent	325.00
Telephone and Telegraph	78.07
Postage	183.26
Stationery and Printing	78.84
Treasurer's Bond and Audit..	75.00
Insurance	8.52
Printing Journal	7,034.17
Press Clipping Service	42.00
Expense Annual Meeting	859.09
Council and Delegate Expense	411.89
Post-Graduate Work Expense	134.85
Medical Defense Expense	100.00
Legislative Expense	25.24
Miscellaneous Expense	25.75
Loan to Public Policy and Public Relations Committee	4,300.00

Total Disbursements **18,141.43**

Balance on Hand March 31, 1937.....\$ 4,282.99

MEDICAL DEFENSE FUND:

Balance February 29, 1936\$ 1,093.75

RECEIPTS:

Fees Collected	\$ 1,561.00	1,561.00
Total Cash to Account for	\$ 2,654.75	

DISBURSEMENTS:

Transfer to General Fund	\$ 1,000.00
Medical Defense of Members	160.00

Total Disbursements **1,160.00**

Balance on Hand March 31, 1937\$ 1,494.75

The foregoing statement and following Audit is

CASH ON DEPOSIT

March 31, 1937

First National Bank, McAlester, Oklahoma

GENERAL FUND:

Balance as per Records\$ 4,282.99

ADD:

Outstanding Checks:	No.	Amt.	
	3617	4.00	
	3574	1.00	
	4115	4.00	
	4472	3.00	
	4473	439.11	
	4474	52.00	
	44.75	6.50	509.61

Balance as per Bank Statement and
Verification Letter\$ 4,792.60

MEDICAL DEFENSE FUND:

Balance as per Records\$ 1,494.75
OUTSTANDING CHECKS None

Balance as per Bank Statement and
Verification Letter\$ 1,494.75

INCOME AND EXPENDITURES

For Period from February 29, 1936, to March 31, 1937

GENERAL FUND:

INCOME:

Advertising	\$ 5,742.04
Memberships	10,045.00
Interest Received from U. S. Government Bonds	162.51
Repayment of Advance at 2-29-36	70.00

Total Income\$16,019.55

EXPENDITURES:

Salaries: Secretary-Treasurer	2,800.00
Salaries: Assistant Secretary	1,625.00
Other Office Salaries	25.00
Social Security Tax	9.75
Rent	325.00
Telephone and Telegraph	78.07
Postage	183.26
Stationery and Printing	78.84
Treasurer's Bond and Audit	75.00
Insurance	8.52
Printing Journal	7,034.17
Press Clipping Service	42.00
Expense Annual Meeting	859.09
Council and Delegate Expense	411.89
Post-Graduate Work Expense	134.85
Medical Defense Expense	100.00
Legislative Expense	25.24
Miscellaneous Expense	25.75

Total Expenditures\$13,841.43

Excess of Income over Expenditures.....\$ 2,178.12

MEDICAL DEFENSE FUND:

INCOME:

Fees\$ 1,561.00 \$ 1,561.00

Total Income\$ 1,561.00

EXPENDITURES:

Medical Defense of Members..\$ 160.00

Total Expenditures 160.00

Excess of Income over Expenditures.....\$ 1,401.00

BOOK REVIEWS

A TEXTBOOK OF MEDICINE by Charles Phillips Emmerson, M.D., Research Professor of Medicine, Indiana University. Formerly Associate in Medicine and Medical Resident, Johns Hopkins University; Assistant Professor of Medicine, Cornell University, (Ithaca); Medical Superintendent, Clifton Springs Sanitarium, New York; Professor of Medicine and Dean, Indiana University School of Medicine, Indianapolis, Indiana. Cloth, Price \$8.00. J. B. Lippincott Company, Philadelphia.

This book is well indexed and divided into chapters on different symptoms and any subject is easily found. It is easily read and is an excellent book for the general practitioner to have on his desk for immediate use. It is impossible for a book this size to cover in whole all practices and for that reason general treatment is sometimes cut short but most all of the later treatments are mentioned or discussed. The cuts are excellent and it is well worth the reading and will help any busy man in every day practice on most all subjects that come in his general line of work.

HANDBOOK OF ORTHOPAEDIC SURGERY, by Alfred Rives Shands, Jr., B.A., M.D. Associate Professor of Surgery in Charge of Orthopaedic Surgery, Duke University School of Medicine, and Chief of the Orthopaedic Service, Duke Hospital, Durham, North Carolina; Member of the American Orthopaedic Association, The American Academy of Orthopaedic Surgeons, and the International Society of Orthopaedic Surgery. In Collaboration with Richard Beverly Raney, B.A., M.D., Instructor in Orthopaedic Surgery, Duke University School of Medicine. With 169 Illustrations. Price \$5.00. The C. V. Mosby Company, St. Louis, 1937.

This book, designated for the student and general practitioner, is very well arranged and the material describes all of the usual orthopaedic conditions. Etiology and symptomatology are covered in such a manner as to give to the student a good working knowledge of the condition. Corrective and operative procedures are outlined sufficiently so that the reader may acquaint himself with the general idea and what may be hoped for in a curative way.

The fact that the subject matter has been reviewed by various teachers should establish this work as a standard text.

"Benzedrine Inhaler" in Sinusitis

Bertolet (Clin. Med. and Surg., 44:25, January, 1937), reports on results obtained in three hundred six cases of sinusitis treated with the vapor of benzyl methyl carbinamine, in the form of "Benzedrine Inhaler."

In the acute and chronic sinusitis group of one hundred twenty-nine cases, seventy per cent obtained excellent results with the use of the vapor not oftener than once an hour; twenty-three per cent had fair results; and seven per cent poor. Best results were obtained with those patients who used the inhaler post-operatively, and least favorable results were observed in those cases where operation was indicated. In the acute rhinitis group, eighty-three per cent showed excellent results, with fourteen per cent fair and three per cent poor.

The author concludes that for the treatment of paranasal sinusitis "Benzedrine Inhaler" offers an efficacious and desirable form of therapy.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Intramural Formation of Gallstones. By S. W. Moore, M.D., New York. *Archives of Surgery*, March, 1937.

In a publication entitled "De sedibus et causis morborum," Morganti, in 1761, first described stones within the walls of the gall bladder.

In 1858 Luschka made some studies of the human gall bladder, with particular reference to the glands of the organ. He found some duct-like structures between the gall bladder and the liver, but they did not open into any space. Since that time these structures have been called "true Luschka ducts."

In 1861 Rokitsansky stated that hernia-like diverticula of the mucous membrane are present in the gall bladder sometimes in great numbers, but he thought that they were usually insignificant, with very small openings into the lumen. He thought that explained why the dark colored concretions often found in them appeared to be placed between the layers of the wall of the gall bladder.

According to the author of this article, Aschoff clarified the situation in 1905. Since then the name of Aschoff has been coupled with the name of Rokitsansky, and since then, too, this peculiar morphology of the gall bladder has, in its ensemble, been called "Rokitsansky-Aschoff sinuses." These sinuses appear to be small out-pouchings in the mucous membrane of the wall of the gall bladder. They apparently form excellent sites for the collection of debris and infectious material. Manifestly, when stones are developed in the wall of the gall bladder the wall is weakened, and that circumstance predisposes to perforation of the gall bladder if an infection should supervene.

The author studied three hundred gall bladders removed at operation. In two hundred thirty-one, or seventy-seven per cent, there were stones in the lumen of the gall bladder, and of these ninety-eight, or forty-two per cent, showed Rokitsansky-Aschoff sinuses. In the sixty-nine gall bladders without stones in the lumen only three or four per cent showed the sinuses. It would appear, therefore, that Rokitsansky-Aschoff sinuses are nearly always associated with cholelithiasis. In his conclusion, the author says, "The sinuses are the result of cholelithiasis and secondary infection rather than the cause of gallstones."

In the course of the article, the author makes the following comment: "After the formation of a Rokitsansky-Aschoff sinus, what may be its course? (1) It may remain stationary. (2) It may produce 'cholecystitis glandularis proliferans.' (3) It may develop into a diverticulum. (4) It may form an abscess and perforate. (5) Stones may form in its interior.

COMMENT: This is a very important and instructive article about a pathological situation that is apparently not any too well understood.

LeRoy Long.

The Decline in the Strength of Catgut After Exposure to Living Tissues. By J. E. Rhoads, M.D., H. F. Hottenstein, M.D., and I. F. Hudson, M.D., Philadelphia. *Archives of Surgery*, March, 1937, Page 377.

The larger part of this article is a long, tedious, but none the less valuable historical review.

Incidentally, there is an interesting reference to the experiment of Philip Syng Physick, the first professor of surgery in the School of Medicine of the University of Pennsylvania, who was largely responsible for catgut coming into general use in surgery. He carried out experiments, and demonstrated that catgut was absorbable after it had been introduced into the tissues of the body. This work of Physick was done about 1816.

The earlier experiments were concerned particularly with the absorbability of catgut, Physick and Porta being mentioned in that connection. Experiments on the sterilization of catgut were begun by Lister in 1868.

Four main requirements for good surgical catgut are set down by the authors. They are strength, suppleness, sterility and absorbability.

Iodized catgut was introduced by Claudius in 1902. He believed that its absorption was slightly slower than the absorption of catgut prepared with phenol and alcohol.

There is an interesting reference to the experiments of Miyake in 1904. He soaked catgut for twenty-four hours in five per cent solution of an extract of quebracho, which is an Argentine oak very rich in tannic acid. Before his experiment he believed that ordinary catgut, even in the larger sizes, would hold its strength not longer than nine to twelve days. He reported that the catgut soaked in the five per cent solution of the extract of quebracho was found intact in the tissues sixty-five days under aseptic conditions, and about thirty-two days in a septic wound, his experiments being carried out in a dog.

The conclusion of the numerous investigators quoted seemed to be that, under ordinary conditions, the most rapid absorption of catgut takes place in the superficial layers of the skin. There is unanimous conclusion that the absorption and decline in the holding powers are greatly facilitated in the presence of infection.

The authors report that they have carried out many experiments on dogs with particular reference to the effect of tissue fluids upon catgut. They conclude that tanned iodized catgut possesses substantially more resistance to the action of tissue fluids than plain or chromic catgut. This is particularly interesting in connection with the experiments of Miyake in which he soaked catgut in a solution of an extract of quebracho, the chief constituent of which is tannic acid.

While the authors agree that infection hastens the absorption of catgut, they report that in their experiments where there happened to be incidental infection the absorption of tanned iodized catgut was not hastened in a pronounced way.

Apparently, it is the conclusion of the authors that where the persistence of tensile strength is of importance it would be well to employ tanned iodized catgut.

COMMENTS

The persistence of the tensile strength of suture material is of extreme importance in connection with reparative and reconstructive surgery of the hidden viscera of the body but particularly of the hollow organs of the abdominal cavity; in connection with the ligation of large blood vessels; in connection with the closure of the abdominal wound. Any constructive experimental work that points a way to the preservation of tensile strength of suture and ligature material is of inestimable value.

There is one fact that has not been considered by the authors and that is that catgut is much more rapidly absorbed in certain individuals than it is in certain other individuals. In other words, it seems pretty clear that the tissue juices of a few individuals digest catgut very much more rapidly than is the case in the average individual. An enlightening article by J. William Hinton, assistant attending surgeon, New York Post-Graduate Hospital, and published in the Archives of Surgery, August, 1936, directs attention to this significant and often unrecognized condition. The title of his article was "Allergy as an Explanation of Dehiscence of a Wound and Incisional Hernia." In that article he calls attention to the striking fact that in the majority of cases of separation of the abdominal wound there are no evidences of infection. In such cases he believes that the separation of the wound that has been closed by tier sutures of catgut is due to the unusual capacity of the tissues of the particular patient to digest catgut prematurely. In that connection, he refers to Erdmann's employment of the term "tissue hunger."

The article of Dr. Hinton was abstracted by the writer and the abstract was published in The Journal of the Oklahoma State Medical Association, September, 1936, page 340. LeRoy Long.

Additional Data on the Treatment of Uterine Bleeding with Snake Venom. By Morris A. Goldberger and Samuel M. Peck, New York. The American Journal of Obstetrics and Gynecology, March, 1937, Page 469.

This is a report upon the clinical results in twenty patients with functional uterine bleeding and an impression obtained by experimentally treating five cases of uterine bleeding due to fibroid with snake venom.

The conclusions of the authors follow:

"1. Moccasin snake venom injections have been used with good results in seventeen of twenty cases of functional uterine bleeding.

"2. The control of bleeding probably results by means of the action of the venom on the uterine capillaries, making these vessels more resistant to hemorrhage.

"3. The method of treatment is offered as a procedure which will control functional uterine bleeding until there is a return to normal menstruation.

"4. Adequate dosage based on clinical symptoms must be determined for each patient.

"Moccasin snake venom has very little effect on uterine bleeding due to fibromyomas."

The method of administration is carefully outlined. They noted a distinct quantitative relationship between the desired clinical effect and the amount of venom given. "In a number of the treated individuals a period of from six months to one year of normal menstruation occurred after the venom therapy has been discontinued."

In certain cases there was a hypersensitivity to the snake venom protein about the tenth day which was characterized by erythematous swelling at the injection site after eight to twelve hours.

There were no general reactions. Desensitization was easily brought about by reducing the subsequent injection.

COMMENT

A great deal of credit is due the members of the gynecological service at Mt. Sinai Hospital in New York for their careful work in studying the use of snake venom in the treatment of functional uterine bleeding. It is the feeling of Dr. Robert Franks on that service that most of the patients with functional uterine bleeding at puberty will return to normal menstruation under proper supportive therapy. It was for this purpose that he encouraged the employment of snake venom in the treatment of such patients in Mt. Sinai Hospital.

It is in such individuals having profuse functional bleeding early in their menstrual lives that snake venom therapy must be carefully considered as a part of the treatment. Wendell Long.

Hematometra Due to Atresia of the Cervix Following Cauterization. By A. L. Henkin, Brooklyn, N. Y. American Journal of Obstetrics and Gynecology, March, 1937.

A case is reported in which cauterization of the cervix was done followed by amenorrhea. There was a closure of the cervical canal with hematometra responsible for a uterus the size of a three months pregnancy. Following operation with the establishment of a new cervical canal the patient menstruated regularly and four months later had a normal size uterus with a patent cervical canal.

Two very pertinent conclusions are drawn from this experience.

"1. Whenever cautery is used in the treatment of chronic cervical diseases, the patient is to be kept under observation to prevent stenosis or complete atresia.

"2. The indiscriminate use of cautery in the treatment of the cervix is not without danger."

The author also speaks briefly of the danger of cauterization in the presence of acute inflammatory lesions. (Though he does not emphasize it, I am sure that he means acute inflammatory lesions of the cervix or pelvis.)

COMMENT

Since cauterization has been universally adopted in the treatment of many chronic inflammatory lesions of the cervix, observations such as this one are extremely valuable. When a cauterization of the cervix has been done, the individual should be kept under observation for at least two months time, not only to prevent atresia but to be sure that there is no stenosis which will subsequently produce additional pathology and symptoms.

It has also become a common practice to treat chronic inflammatory lesions of the cervix by cauterization combined with sub-total supravaginal

hysterectomy in preference to performing total hysterectomy. I have recently seen two patients so treated in whom there was a complete atresia of the external os region and chronic inflammatory cavities of the cervical canal region containing tarry mucoid material. Biopsies from each showed microscopic evidence of chronic inflammation. When combined with sub-total hysterectomy, the symptoms will not be as pronounced as in true hematometra, but chronic inflammatory cervices remain as irritative lesions of the cervix unless these patients are also kept under careful observation for a similar length of time.

This author speaks of the very real danger of cauterization treatment in the presence of any acute pelvic inflammation. It should be added that there are certain dangers in performing a cauterization too near a menstrual period. The preferable time for cauterization treatment is from five to ten days after the completion of an average menstruation.

These precautions do not minimize the advisability and the adaptability of cauterization treatment to selected types of chronic inflammatory lesions of the cervix, where the operator is certain that there is no malignant tissue in the cervix to be treated.

While this article is written concerning a complication of cauterization treatment of the cervix, the same precautions are applicable to the surgical operations upon the cervix for chronic inflammatory lesions. As an example, I have recently operated upon a patient who had a partial amputation of the cervix several years ago in another section of the country. She was a woman of forty with a history of dark blood from the vagina on violent exercise. There was an apparent complete atresia of the os established at previous operation and she had been menstruating through a small opening high in the left vaginal fornix which was apparently produced by sloughing of the suture line at the previous cervical repair. There was a chronic inflammatory cavity within the cervix two inches in diameter which was filled with tarry mucous and purulent material.

It would seem, therefore, quite apparent that the cervix which has been treated by surgical procedures should receive just as careful, if not more careful, post-operative attention for a long enough period to be certain of complete healing and function.

Wendell Long.

Factors of Significance in the Prognosis of Cancer. By Donald C. Balfour. Surgery, March, 1937, Page 472.

This is a report printed in this journal of a paper read by Dr. Balfour at the meeting of the Southern Surgical Association in December, 1936.

Balfour summarized some of his experiences with cancer of the stomach which are significant in the prognosis. In a statistical study of over two thousand and one hundred cases of operation for gastric carcinoma, the following facts were obtained: The shorter the histories, the less chance of cure; the larger the tumor, the better the prognosis. A lesion at the pyloric end of the stomach was less amenable to cure than lesions of the body and fundus. There was less chance of permanent cure in cases with lymph node involvement, but after five years, patients with and those without lymph node involvements had practically the same chance of continued existence. Broder's grading showed a definite difference in the life expectancy, the grade four types dying relatively much earlier than those of grade three, two and one, respectively. The higher

the gastric acidity, the better the prognosis. Forty-five per cent of cases are operable, but only nineteen per cent of the cases are amenable to some type of operation (resection) which could possibly promise a cure. About thirty per cent of cases that have had extirpation of the growth and regional nodes will have five-year cures. Average life expectancy without palliative or radical operation is five months and with palliative operation (gastro-enterostomy) is six months. LeRoy D. Long.

Sterilization of the Air in the Operating Room With Radiant Energy. By Dr. Deryl Hart, Durham, N. C. Surgery, March, 1937, Page 473.

Dr. Hart, who is the professor of surgery at Duke, reported the result of clinical and experimental investigations on the sterilization of the air in the operating room with radiant energy. By culturing the air in the room he found a high degree of contamination. Reports from other men throughout the country who cultured the air in their operating rooms showed similarly a high degree of air contamination. The number of persons in the operating room increases the amount of contamination. Ultraviolet light at distance of five feet practically sterilized contaminated agar plates within a period of sixty seconds for light contamination to five minutes for heavy contamination. The experimental evidence presented by Hart was very convincing. Installation of ultraviolet lights over their operating tables has reduced the incidence of unexplained infections following operation from 5.5 per cent to 0.6 per cent. The method necessitates wearing heavy covers for the heads of all the operating team and protection for the eyes.

LeRoy D. Long.

Acute Perforated Appendicitis. By Dr. Roy D. McClure, Detroit. Surgery, March, 1937, Page 472.

Dr. McClure, who is the surgeon at the Ford Hospital in Detroit, reported a detailed study of two hundred fifty-two consecutive cases of acute perforated appendicitis with peritonitis. The mortality was increased with cathartics and with complications present on admission. McClure emphasized the fact that sixty per cent of the patients had symptoms that were atypical of appendicitis but not signs which were atypical. Generally the objective findings are typical. He does not use the conservative treatment in cases that have developed complications. The mortality in his series was greater the closer the incision approached the midline. He favors the McBurney incision in acute appendicitis. The majority of the discussers of this paper are said to have approved of the use of the McBurney incision in acute appendicitis and they decried the use of the right rectus incision.

LeRoy D. Long.

Surgical Aspects of Acute Cholecystitis. By Dr. George Heuer, New York. Surgery, March, 1937, Page 470.

In a paper read at the Southern Surgical Meeting, December, 1936, Dr. Heuer (who is the professor of surgery at Cornell in New York City) reviewed the records in one thousand five hundred and sixty-five cases taken from Cincinnati General Hospital, the old New York Hospital and the new New York Hospital. He concluded that there was no direct parallelism between the stage of pathology of the inflamed gall bladder and the symptoms which these patients present. His studies showed that gangrene and perforation of the gall

bladder occurred in approximately twenty per cent of the cases of acute cholecystitis. The mortality following perforation of the gall bladder averages approximately forty-six per cent. He presents a series of one hundred sixty three consecutive cases of acute cholecystitis in which operation was done early. In this group, sixteen had perforation on admission. The mortality for the entire series of one hundred fifty-three cases was 3.2 per cent. He concluded that over emphasis has been placed on the danger of operation in the acute stages of cholecystitis, and the mortality is thus shown to be less from immediate than from delayed operation.

LeRoy D. Long.

Regional Ileitis. By Dr. John deJ. Pemberton, Rochester, Minn. Surgery, March, 1937, Page 471.

Thirty-nine cases were examined and studied by Dr. Pemberton and Dr. P. W. Brown at the Mayo Clinic. The lesion was most frequently single, was occasionally multiple. It occurred usually in the terminal ileum but occasionally involved other segments of the intestinal tract. Changes in the small intestine which could be detected by x-ray occurred early in the course of the disease. Clinically the cases present the following symptoms: frequently pain, sometimes with nausea, vomiting, and abdominal distention; occasionally diarrhea, loss of weight, anemia, and fever. The etiology is not known. The treatment of choice is a two-stage operation, the preliminary operation consisting of an ileocolostomy, subsequently resection of the diseased segment or segments. Of nine cases of extensive regional enteritis, resection was performed in two and the patients have remained well for one year and eight months, respectively. In the remainder of these cases, only the short-circuiting operation was performed, and the results have not been very encouraging. Of the twenty-seven cases in which the process was localized, in nineteen the patients are well; four are still having trouble; three have died; and one has not been traced. In eight of the twenty-seven cases, a short-circuiting operation was the only operative procedure employed. In three cases in which only the short-circuiting operation was performed, a deficiency syndrome developed.

LeRoy D. Long.

PLASTIC SURGERY

Edited by

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Neglected and Recurrent Basal Cell Epitheliomas of the Face. Herbert Willy Meyer, M.D., F.A.C.S., New York. S. G. and O., March, 1937.

The author points out that basal cell tumors of the face when seen early and treated radically can be cured.

However the entire lesion must be destroyed at the first operation or else recurrence takes place. The treatment can be effected by x-ray, radium, galvanic-cautery, electro-coagulation or by surgical excision providing all of the lesion is removed.

Lesions which overlie cartilage and bone seem to recur quite often and must later be destroyed by active cautery. Also some tumors are ray resistant and one should learn that if this condition obtains the case should be referred to a trained cancer

surgeon specialist. The continuation of ray treatments in these cases obtains unfavorable results.

The author stresses a principal in dealing with recurrent tumors by advising wide excision of the tumors together with the underlying cartilage and bone. The defect left by this radical procedure is to be repaired by a plastic flap sutured to the area.

CONCLUSIONS: These cases of recurrent basal cell epitheliomas of the nose and cheek are reported for the following reasons:

1. It seems best to advise that radical and thorough excision of the basal cell epitheliomas overlying cartilage and bone be done as the best method of treatment and that the underlying cartilage and possibly bone should be removed with the lesion.

2. The primary early lesion may be treated by radium or x-ray if they are used by experts and the dosage so given that the lesion is completely destroyed without damaging the underlying cartilage. If however, recurrence occurs even though x-ray and radium were used by experts the case should be immediately turned over to surgery as the lesion is probably radio-resistant and further radium or x-ray will be of no avail.

3. Surgical excision in recurrent cases must be planned so as completely to surround the lesion on all sides as well as in the depth irrespective of the cartilage or bone that has to be removed.

4. "Temporary ligation" of the external carotid artery by angulation will save a great deal of blood loss during the excision of the lesion and will preserve the full blood supply for healing following reconstruction plastic closure.

5. Gwathmey's colonic ether oil anesthesia makes these lengthy procedures possible and seems to be the ideal anesthesia for these types of cases.

6. The Einhorn duodenal tube introduced into the stomach with an Einhorn introducer at the time of operation, or the introduction of the Levine tube immediately following the operation when the patient can swallow, makes it possible to start fluids and nourishment immediately following operation and will keep the operative field dry.

7. Immediate closure of a large defect after the malignant lesion has been thoroughly removed seems preferable to leaving the wound wide open for observation for months in order to look for recurrence. This seems logical from the economic, psychological, and clinically practical point of view.

Of these four cases, reported in the article, of extensive recurrent epithelioma of the nose or cheek, one case has remained well seven and one-half years since operation, a second case three years since operation, a third case nineteen months and a fourth case fourteen months.

COMMENT: In my experience ray resistant tumors (basal cell type) about the face, eyelids, nose and lips have been best treated by radical excision. In the case of tumors of the face, especially the cheek, I have had no favorable results except where the radical procedure was carried out.

Following excision of some I have covered the defect by split grafts and in others allowed the granulations to develop before applying the graft. I have not used the immediate flap technique as described by the author but it appeals to me as a very practical procedure.

A recent case of sixteen years duration was widely excised by the endotherm knife and apparently is making a complete recovery.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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Suppurative Arthritis of the Sacro-Iliac Joint.
Joseph B. L'Episcopo. Annals of Surgery, CIV,
289, August, 1936.

As in other pyogenic joint infections, a blood borne infection may involve the sacro-iliac joint primarily or this joint may be involved secondarily from a primary focus in the ilium or sacrum adjacent to the joint.

The patient appears acutely ill with a temperature of from one hundred to one hundred four degrees, a rapid pulse, and leukocytosis with an increase in polymorphonuclear neutrophils. Pain is present in the buttock, in the hip area or over the sacro-iliac joint, and in the lower right or left abdominal quadrant. There is definite tenderness on pressure and percussion over the sacro-iliac joint. In the early stages, the roentgenogram is negative; after three weeks, definite destruction can be demonstrated.

Pus under pressure in the joint follows the path of least resistance; it quickly breaks through the thin anterior sacro-iliac ligament, burrows under the ilacus muscle, and fills the iliac fossa.

Treatment consists of early drainage through the sacro-iliac joint by resecting a block of the ilium over the joint and that part of the sacrum forming the joint, thus permitting the admission of two fingers into the pelvis. The iliac muscle is lifted from behind. Free pus is usually not found until the pelvic cavity is entered. The wound is packed with vaseline gauze and a plaster-of-Paris spica is applied.

Nerve Injury in Fracture of the Pelvis. Conrad R. Lam. Annals of Surgery, CIV, 945, November, 1926.

Six of eighteen patients with fracture of the pelvis, treated at the Henry Ford Hospital during a recent one-year period, presented definite evidence of nerve injury. This experience prompted a study of one hundred consecutive cases which showed that nerve injury was present in nine per cent of the cases, as compared to fourteen cases or 0.74 per cent of one thousand eight hundred eighty-nine cases collected from the English and German literature during the past twenty years.

The nerves involved in the nine cases were as follows: the peroneal component of the sciatic nerve, six cases; the lateral cutaneous femoral nerve, three cases (bilateral in one case); the superior gluteal nerve, one case; and the posterior branches of the first three sacral nerves, one case.

The preponderance of sensory over motor disturbance, the tardy appearance of symptoms, and the spontaneous regeneration, suggest that the trauma is in the form of stretch or contusion of the nerves.

Case reports of the nine cases are presented together with a bibliographic table showing the incidence of nerve injury in the reported series of cases.

Artroplastia de la Cadera. Caso Clinico de Evolucion Atipica. (Arthroplasty of the Hip. A Clinical Case with an Atypical Evolution.) Alberto Inclan. Cirugia Ortopedica y Traumatologia, IV, 109, 1936.

This case is interesting in that the surgical intervention failed and, in spite of it, a notable im-

provement was obtained, thanks to the extraordinary will power and perseverance of the patient.

The author points out that "static and functional reconstruction surgery of the joints requires, more than any other, the most decided and absolute co-operation of the patient, if it is to achieve its purpose."

"The first contra-indication to arthroplasty is pusillanimity and lack of trust of him who requires it."

The case presented illustrates this. The arthroplasty performed was quite lost by infection of a hematoma, with necrosis, not only of the interposed fascia flaps, but also of the cervical portion of the femur, which had to be removed later on as a sequestrum.

Two years after this second intervention, the patient returned for treatment. He walked with crutches and experienced pain as the femur ascended when he tried to bear weight on the affected leg. An operative reduction of the subluxation of the hip was performed and the hip was immobilized in a plaster spica in about forty degrees of abduction. When the spica was removed, physiotherapy was instituted. However, the contact of the trochanter with the iliac bone caused pain which made walking impossible. After an interval of some months the fourth and last intervention was done, consisting in a bifurcation of the trochanter after the method of Albee, which effected extraordinary improvement in the stability and in the function of the reconstructed hip. The patient now exhibits a motility of about sixty degrees for active as well as passive movements.

INTERNAL MEDICINE

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By HUGH JETER, M.D., F.A.C.P., A.S.C.P.

Trichinosis, With a Report of Two Cases With Eosinophiles in the Stools. E. A. Baumgartner, M.D., and Albert Cowles, B.S., Newark, N. J. The Journal of Laboratory and Clinical Medicine. Vol. 22, No. 5, February, 1937.

Two cases of trichinosis are herein reported. In this the authors have emphasized the finding of eosinophiles in the stools, an examination which in these cases aided in the diagnosis. The cases are extremely interesting and the suggestion that the finding of eosinophiles in the stool as a diagnostic procedure is also worthy of serious consideration.

This is a timely suggestion. Reports have come from the Public Health Department at Washington indicating that trichinosis is a relatively common disease occurring in twelve to twenty per cent of individuals in different portions of the United States. A survey of autopsy material at the University Hospital and other institutions throughout the United States is being made and will doubtless give us more accurate and complete data on this important subject.

The Mechanism of Anemia. Russel L. Haden, M.D., Cleveland, Ohio. The Journal of Laboratory and Clinical Medicine. Vol. 22, No. 5, February, 1937.

In this the author has in a very beautiful manner discussed and fully illustrated his conception of the mechanism of anemia. It is interesting to

note that he defined anemia as follows: Anemia is a reduction below normal of the capacity of the blood to transport the oxygen necessary for all animal life.

His illustration of the red cells' functioning "cups" on an "endless chain conveyor" is extremely interesting. In this the different size cells and their corresponding capacities are conveyed.

The normal physiology as well as the physiology of the red cells under various pathological circumstances are beautifully illustrated.

He points out the methods of illustrating the bone marrow function, the rate of the destruction of erythrocytes as well as other important factors in red cell activity and emphasizes the importance of satisfactory classification of anemias, both from the clinical and laboratory standpoints.

Further Studies in the Treatment of Agranulocytosis. The Effect of Injections of Liver Extract and Milk Protein on the Blood and Bone Marrow of the Rat. Carl Reich, M.D., and Eleanor Reich, New York, N. Y. *The Journal of Laboratory and Clinical Medicine*. Vol. 22, No. 5, February, 1937.

In this the authors have reported the results of injections of milk and liver extract on a group of laboratory animals. It was found that injections of milk protein were about the equivalent of the injections of normal saline and were, therefore, of very little value in stimulating or improving the maturation of the granulocytes of the rat.

Injections of liver extract has a moderate stimulating effect.

The authors recommended that liver extract should be tried in these cases.

I have had a case of agranulocytosis in the hospital under careful observation for more than one year and have repeatedly tried the use of liver extract but without any evidences of stimulation of granulocytes.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Subconjunctival Section of the Ductules of the Lacrimal Gland as a Cure for Epiphora. *Archives of Ophthalmology*, February, 1937. P. Chalmers Jameson, M.D., Brooklyn.

The treatment of epiphora that has not yielded to the ordinary procedures is here discussed. The author's procedure aids such surgical maneuvers as repeated probings for occlusion of the nasal duct and complete obliteration of the lacrimal sac and canaliculi following extirpation of the sac.

Extirpation of the gland has lost popularity because of thrombosis, pressure on optic nerve, orbital hemorrhage and possible ptosis.

According to Sokalski the conjunctival caruncle and merbomian glands furnish sufficient moisture for lubrication of the eyeball.

Whitnall is authority for the statement that the ductules seldom number more than twelve.

The author has operated six patients recently with gratifying results; his technic is as follows: An opening large enough to allow free manipulation of Stevens scissors is made on the conjunctival surface of the lid adjacent to and a little be-

low the outer canthus; the lid is everted and the fornix put on a stretch and using the scissors the conjunctiva is separated from all basic tissues of the fornix for a distance of the outer two-thirds; the openings of the ductules are not visible; the bulbar conjunctiva adjacent to the fornix is put on a stretch and the operator reassures himself that the separation of the basic tissues is complete; if it is complete then all ductules have been cut. Care must be taken to avoid cutting the levator muscle at its insertion into the tarsal cartilage.

Post-operative there was no edema of the orbital tissues although some complained of a fuller sensation of the cheek on the operated side; this was scarcely noticeable. After treatment consists of a compression bandage for a day or two and use of metaphen 1:2,500 instilled. Ten to fourteen days is required for the healing of the primary incision and then the cure should be evident.

Xerosis of the conjunctiva or any condition which impairs conjunctival contribution is a contra-indication.

Engelking's article on corneal and conjunctival changes resulting from insufficient lacrimal secretion is discussed.

Some of the advantages of this procedure, as claimed by the author are: simple technic under local deep anesthesia; rapid performance; almost extra-orbital; little trauma; no penetration of the posterior areolar fat; and saves subjecting the patient to a semi-major procedure.

Familial Hyaline Dystrophy in the Fundus Oculi or Dooyne's Family Honeycomb "Choroiditis." M. Tree, London. *The British Journal of Ophthalmology*, February, 1937.

Various pathological conditions in the eye may produce hyaline exudates in relation to the choroid and retina. The hyaline degeneration is a product of altered local metabolism, and occurs according to the author as a degenerative change in inflammatory exudates; as a result of chronic toxæmias; as a local effect of vascular sclerosis; as one of the manifestations of senile change; and as an example of premature senescence in ocular tissues, induced by abiotrophies of congenital and familial origin.

R. W. Dooyne is credited with first separating the familial type of central choroiditis. The author gives a summary of Dooyne's observations on this condition. The normal histology is reviewed. The aetiology is discussed, and some theories given from Fuchs, Parsons, and Lauber.

The material for this publication was obtained from the Oxford Eye Hospital. The writer examined eight affected cases, and twelve unaffected descendants. Other case records of the hospital were scrutinized. The results of the refraction of these cases showed them with no marked tendency to hypermetropia or under-development, but the eyes of the unaffected members were inclined to be more myopic.

The visual field examination showed them normal in the beginning of the disease; much later there may occur paracentral scotoma; and the peripheral fields remain full throughout.

The estimation of the light sense and color thresholds by means of Dr. George Young's Album of Thresholds tests yielded no useful information. In far advanced cases both the light sense and color thresholds were equally reduced.

The general physical examinations were essentially negative; no associated mental disturbances

or family history of mental trouble (in contradistinction from the three sisters described by Hutchinson and Tay).

No abnormalities were noted in the media of the affected patients; no posterior polar or complicated cataracts were noted; vitreous was normal; no constantly associated developmental ocular defects were found; and the retinal vessels and color of the optic discs were normal.

The author's description of the fundus does not lend itself well to a recapitulation so it is being given verbatim: "The AVERAGE FUNDUS APPEARANCE of a typical fully developed honeycomb 'choroiditis' consists in the presence of a horizontally disposed oval area of closely packed rounded exudates, enclosed above and below by the upper and lower temporal branches of the retinal vessels. Laterally the area extends from the margins of the optic disc towards the temporal side of the fundus for about five disc diameters, while the vertical extent is about three disc diameters. The exudate are greyish-white or putty-colored, and are for the most part of uniform size and rounded. The average diameter of the spots is about two to three times that of the main retinal vessels at the disc. At this stage the spots are discrete and surrounded by shadow-rings suggesting a honeycomb or circular mosaic appearance. A few rounded exudates are present on the disc margin deep to the retinal vessels, and a few isolated spots occur to the nasal side of the optic disc. A small amount of irregularly disposed pigment may be present, mostly in interlacing linear formation in the macular area, with some fainter cloudy pigmentation. As a temporary phenomenon a small amount of hemorrhage may be seen at the macular region, and this occurrence coincides with a decrease in visual acuity. The whole condition is bilateral, though the appearance may vary in the two eyes and may be slightly more advanced in one than in the other."

A detailed description of the fundus in early and advanced cases is given. Of the two main families concerned, two genealogical trees are given. Photographs of several fundi are reproduced.

The differential diagnosis includes cerebro-macular degenerations, retinitis punctata albescentis, early mild disseminated choroiditis, arteriosclerotic retinitis, renal retinitis, diffuse choroiditis and exudate retinitis. Each condition is differentiated. The cases are given in much detail with reproduction of many of the defects in the visual field.

Upper Dysphagia. D. R. Paterson, Cardiff. *The Journal of Laryngology and Otology*, February, 1937.

The article begins thus: "The oesophagus has been termed, not inaptly, the step-child of practical medicine and, like its prototype, it has suffered unduly from neglect."

Tongue depressors, spatulae, laryngeal mirrors and the oesophagoscope are some of the mechanical aids mentioned for the examination. The Vienna school, and especially Stoerk and Mikulicz are given credit for the evolution of the oesophagoscope.

Radiography with the judicious use of barium has helped in locating folds and irregularities of the mucous surface, varices, small ulcers, pouching, stenosis, dilation, and non-opaque foreign bodies such as chicken bones and fish bones.

Congenital narrowing of the oesophagus is perhaps one of the most interesting and least recognized conditions in the adult that produces dys-

phagia. Dysphagia does not necessarily accompany a congenital narrowing of the oesophagus as Brown-Kelly showed a few years ago at post mortem on a male age thirty-five, who had never given any history of difficulty in swallowing but the lumen at the pharyngo-oesophageal junction was only four millimeters in diameter. Greig reported the case of a woman, age eighty-two, death due to senility, who had lived all her life on liquids, showed good development and no emaciation, but there was a narrowing of the oesophagus at the cricoid level through which only a small probe could be passed with difficulty. According to Jackson well masticated solid food can be passed through a lumen of five millimeters in diameter.

A condition is described which has dysphagia as a cardinal symptom but no evidence of an organic disease; this is called "functional dysphagia" and is made up of an undifferentiated group varying from hysterical vagaries to more grave signs of an inability to swallow. This usually occurs in women of middle age and often has such symptoms as anemia and atrophic changes in the mucosa of the mouth, tongue and upper pharynx in connection with increasing difficulty in swallowing. Other changes noted in the patient are the sallow appearance, cracked lips and fissures at the angles and varying degrees of glossitis. Witts in his series of cases remarks that brittleness of the nails with a tendency to split and become spoon-shaped is characteristic. The anemia may be possibly due to an iron deficiency. Achlorhydia may be present.

The order in which the symptoms appear is a moot question. The appearance obtained with an oesophagoscope is discussed. It is variable. Sixty-six cases are reported, covering the period from 1908 to 1920; the age incidence is greatest between the ages of forty and fifty, but occurred from ages twenty to seventy.

Malignancy in women many times involves this same area, i. e., the hypopharynx and the mouth of the oesophagus. It is not an uncommon thing for the disease under consideration to so terminate. Turner's statistics show the incidence of malignancy greatest at the upper end of the oesophagus in women and at the lower end in men.

The anemia is treated by the use of iron and ammonium citrate over a long period of time; the glossitis improves with liver extract; the dysphagia may sometimes be relieved by the passing of an oesophageal tube or bougie. Rogers removed the superior cervical ganglion on both sides in one case which relieved the feeling of dryness in the mouth and pharynx and enabled the patient to swallow better.

Should Cod Liver Oil Be Flavored?

It is a well-known fact that young infants shy at aromatics. Older patients often tire of flavored medications to the point where the flavoring itself becomes repellant. This is particularly true if the flavoring is of a volatile nature or "repeats" hours after being ingested. Physicians have frequently used the terms "fresh," "natural," "sweet," and "nutlike" in commenting upon the fine flavor of Mead's Cod Liver Oil. They find that most patients prefer an unflavored oil when it is as pure as Mead's.

Physicians who look with disfavor upon self-medication by laymen are interested to know that Mead's is one cod liver oil that is not advertised to the public and that carries no dosage directions on carton, bottle or circular. Mead Johnson & Company, Evansville, Indiana, U. S. A., will be glad to send samples and literature to physicians only.

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THE JOURNAL

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VOLUME XXX

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Number 5

Organized Medicine Will Prevail*

SAM A. McKEEL, M.D.

ADA

My Friends and Fellow Physicians:

Were I to be granted a single wish in rising to address this assembly, it would be that you, my esteemed associates, would be as impressed today as I have been impressed throughout the past years by the tremendous responsibilities placed upon us.

We are servants of humanity and have a humanitarian service to perform which can be best accomplished by organization, cooperation and education.

I am heartily glad to be with and of you. It is just such meetings as this which insure to our profession its healthy life and vigorous growth. I do not refer to its numerical increase; and still less have I in mind its pecuniary rewards, although these, let us hope, keep step with its scientific advance.

It is this coming together of earnest men—each with his individual experiences, but all with a single engrossing purpose—which keeps our beloved science abreast of the times and ever ready for the next forward step. The full and candid presentation of our varied experiences—our mistakes and failures, no less than our successes—makes possible intelligent comparison, stimulates suggestion and leads to discussion out of which each of us surely may gather somewhat of profit.

My next word naturally, is one of appreciation to you for the honor that you

have bestowed upon me. I want to thank you gentlemen of the Oklahoma medical profession for the confidence you have placed in me to act as your executive for the ensuing year. I shall approach my responsibility with a sense of inadequacy. I shall need the help of every one of you. I am yours to command.

I desire to help where and when I can and to hold fast to the traditions of the sound science and sensible practice of medicine in Oklahoma. This is a wonder state wholly in need of confidence in herself and all her people. She can call upon her doctors and I pledge that she will find them able and willing.

For our confidence in her welfare we shall expect confidence in our organized profession. I pledge my interest in your problems. I enlist your further enthusiastic participation in organized medicine. If we stand together we can accomplish anything. Divided by silly differences we are all surely to fall heir to practices and policies that would modify the expression of the wonderful doctor of tomorrow. He is our responsibility. We shall not fail him.

In taking on the duties of president, I shall not be less active than I have been in my effort to promote the interests of our association, but will strive to justify the confidence implied in my election to this responsible position.

"It is hardly an exaggeration to summarize the history of four hundred years," said President A. Lawrence Lowell of Harvard University, "by saying that the lead-

*Presidential Address before Oklahoma State Medical Association, Annual Meeting, Tulsa, May, 1937.

ing idea of a conquering nation in relation to the conquered was in 1600 to change their religion; in 1700 to change their laws; in 1800 to change their trade; and in 1900 to change their drainage. May we not say that on the prow of the conquering ship in these four hundred years, first stood the priest, then the lawyer, then the merchant, and finally the physician."

The medical profession has done more for the race than has ever before been accomplished by any other body of men. These gifts to the people have come in the form of vaccination, sanitation, anesthesia, antiseptic surgery, the science of bacteriology and the art of therapeutics.

For devoted service, for the highest expression of generosity and good will, the physician occupies a place quite incomparable. The story told by Ian McLaren in the "Bonnie Brier Bush" of old Dr. McLeod is not exaggerated or overdrawn. It is a tale that may be duplicated in any community. One must believe concerning men of this type that they are motivated by the highest of impulses, and that their ministry is associated with that of the Master, who never turned away from those who were bruised and broken in body.

Like a team of two horses slowly pulling a heavy load out of the mire, the family physician and the specialist are, side by side, slowly but surely liberating the human race from the bondage of disease. Their combined value cannot be measured in dollars and cents, but rather in years of additional life. Together they constitute the greatest team on earth.

Florence Fisher Parry writes: "Nothing can take his place—not priest, nor minister, nor all the clinics that science can provide. There is a rapport and a confidence between him and his patient which has been known to accomplish miracles, and restore to the breasts of mothers, babies about to die, and to the arms of lovers, beloved turned back from death. There's something about the very presence of the doctor that casts out fear, melts apprehension, breaks down suspense, performs the simple miracle of Faith."

Did you ever stop to realize that the medical profession is a truly altruistic pro-

fession? It is the only profession that has as its highest ambition the elimination of the very cause for its existence—the elimination of disease. This fact alone should lead the general public to a very high appreciation of medical service.

Modern medicine is a heritage from devoted scientists who have lived and labored in other days. We are in a literal sense "the heirs of the ages."

There is a man whom we all delight to honor. He adventures bravely through unexplored regions. He makes a path where none ever trod before. He faces the dangers of the unknown and makes them known. He grapples with untried experiences and tames them for the use of men. He endures hardship in order that those who come after him may enjoy comfort. He is called the Pioneer.

We have particular reason for honoring the pioneer doctor. Who better than we should know the value of his untiring labors? Who more than we have seen the currents of health and happiness flow along the trail that he blazed? Who more than we have tasted the sweet fruits of his bitter experiences? All honor to the Pioneer Doctor!

If some debt collector should attempt to collect what we owe to those who lived before us, he would have on his hands a job that he never could finish.

Somebody ought to place a sign high up in the sky where all physicians could read it: "Beware lest you forget your forefathers and their labors for you."

All we need to do at this point is to let memory do her perfect work and bring back to us the story of the early development of medicine.

The physician is by nature an individualist. He elected to study medicine because he felt he could have freedom of thought and action in that field. As civilization developed he came to realize he was dependent, more or less, on his fellow physicians. It was then his problem to seek out others in his profession who shared with him his broader vision. Out of this realization grew what we are pleased to call organized medicine.

Organized medicine is governed by and governs through a code of ethics, self-im-

posed, self-administered. No professional man has more privileges accorded him than the doctor. From the caduceus on his car, which allows him parking privileges beyond the common run, to his professional secrecy which may be invaded only by order of the court, the doctor is endowed with prerogatives denied the others. This is no gratuitous honor conferred on the doctor. The privileges come as the obverse of his responsibilities. But whatever their source, the doctor does have uncommon privileges, and these must be safeguarded by professional supervision, lest they be exploited.

Since the most ancient of times medical men have been governed by a code of ethics. The precepts differed accordingly as the code was Egyptian, Greek, early Christian or medieval, but through all there ran the guiding moral conception of the duties and obligations of the physician. The oath of Hippocrates, framed in days when Greek medicine was in its glory, is the pledge of the medical man today, given as he is invested with the dignity of his calling.

"I swear by Apollo the Physician," so runs the oath, "and Aesculapsius and Hygeia, and Panacea, and all the gods and all the goddesses—and I make them my judges—that this mine oath and this my written engagement I will fulfill so far as power and discernment shall be mine.

"So far as power and discernment shall be mine, I will carry out regimen for the benefit of the sick, and will keep them from harm and wrong. To none will I give a deadly drug, even if solicited, nor offer counsel to such an end; likewise to no woman will I give a destructive suppository; but guiltless and hallowed will I keep my life and mine art.

"Into whatsoever house I shall enter I will go for the benefit of the sick, holding aloof from all voluntary wrong and corruption, including venereal acts upon the bodies of females and males whether free or slaves. Whatsoever in my practice or not in my practice I shall see or hear, amid the lives of men, which ought not to be noised abroad—as to this I will keep silence, holding such things unfitting to be spoken.

"And now if I shall fulfill this oath and

break it not, may the fruits of life and art be mine, may I be honored of all men for all time; the opposite, if I shall transgress and be forsworn."

To this ancient pledge have been added such ethical precepts as the exigencies of modern times require, but the spirit remains the same. And this spirit is embodied, nurtured and preserved by that fraternity of practitioners whom we have learned to collectively call organized medicine. The doctor has been lampooned by the clown and the wit. He has been eulogized by the best of men. But it is a fact that dealing as he does with life and death, practicing an art wherein, as Hippocrates observed, "experience is fallacious and judgment difficult," he needs the sustaining fellowship of his confreres, to teach and to learn, to compare notes and to match experiences, to hold common counsel on what concerns the profession and what affects mankind, and mostly so that the great honor and the great responsibilities of the physician be never lost sight of. For it is true, as it was said in ancient times that "men in no way approach so nearly to the gods as in giving health to men."

Since we have had organized medicine we have made more progress and the science of medicine has reached a higher plane than was possible had each one continued in his isolated and selfish life. It is our belief that we are outstripping all other professions in progress and development today. We are ever looking forward and blazing the trail for others.

As proof of this statement I submit this thought: While the clergy may clothe his sermon in different phraseology, the plan of salvation has not changed since Christ, while dying on the cross said: "It is finished."

The legal profession, although they write the laws by which we are governed, are constantly looking back for a precedent. They search their volumes for cases similar to the one under consideration and seek to convince the court that a case like this one was decided in a certain way, and the judge on the bench is ever ready to lend a listening ear to the old ruling.

The teacher, whose business it is to impart knowledge and inculcate high ideals,

has increased many folds in numbers, but with a knowledge of the vast amount of crime throughout the world today, I seriously doubt if they are doing as good a job as teachers did two or three generations ago.

To keep our progress, we must keep abreast of the times. The golden rule must be closely adhered to and we must be more liberal in letting the world know what organized medicine has done for society in general.

The benefits of the medical profession to the general welfare is but little understood and less appreciated. Where would we be today if medical science had done nothing toward the control of smallpox, diphtheria, typhoid fever, malaria, etc.? What would happen if the doctors would go on a sit-down strike for ten years?

The Surgeon General is now making a drive to stamp out syphilis. Does anyone speculate on the stand the medical profession will take in that most laudable undertaking? And does anyone have any doubts as to the results of this drive? It is my prediction that syphilis will be as scarce in another century as is smallpox now, although a greater per cent of the human race than ever before is suffering from syphilis.

Here in Oklahoma we have been deprived of our medical extension course because the laymen in authority did not understand and appreciate our efforts. It is my hope that we will be able to get this phase of our work re-established before this year has come to a close. This is very important to both the profession and the general public since it gives many doctors an opportunity to take post-graduate work who otherwise could not do so.

The efficiency of Oklahoma physicians compares favorably with that of other states. Our scientific programs at our annual meetings are as good as you will hear anywhere and our meetings are well attended as compared with other states, but we do not have the full cooperation of the membership in our efforts to secure needed legislation. It is my hope that we will become more legislative-minded and that more of our members will aspire to office

in the legislature. And if physicians are unwilling to serve in that capacity, it is hoped our members will be able to agree on men who will be friendly to our profession and who will assist in passing laws beneficial to the public in general and not biased against us.

Since Oklahoma came into the union as a state, our profession has not been favored by laws fair to us and yet we have forged forward and we are keeping our organization intact. We are going to maintain the organization. We realize our responsibility to society and we are ever ready to assume it.

So long as the sun shines, so long as the water flows, until this earth is covered in total darkness and the temperature at the equator is as frigid as it is in the Arctic circle, until pain and anguish in the human body have ceased, and man has disappeared from the face of the earth, there will be a demand for medical service and in Oklahoma that demand will be supplied by organized medicine.

A house divided cannot stand. Its enemies seek to make divisions so they may enter. Let us present a strong undaunted front and follow organized medicine to victory.

Thank you!

How Many Need Help?

Within a small margin of error, about fifty per cent of the population goes through the year without any illness. Fifty per cent of the illnesses of the other half are not disabling. One-half of the remainder, or about twelve and one-half per cent, are of a minor character, such as the common cold, and involve a disability of less than a week. This leaves about twelve and one-half per cent who have serious illness and an expense for wage loss and for medical care sufficient to constitute a real problem. Of these, many are able to meet the necessary expense from their own savings, by deferred payments or from regular income, just as they meet other extraordinary expenses. Thus it seems reasonable to assume that five per cent—certainly less than ten per cent—of the total population are unable to meet their sickness expense without great sacrifice. This is still enough of a problem always deeply to concern organized medicine.

It is a testimony to the accuracy of these figures that when county medical societies have set up machinery to provide medical service for those otherwise unable to obtain it the number served has almost invariably been between three and five per cent of the total population.—*Journal A. M. A.*, February 20, 1937.

"Time Marches On!"*

H. F. VANDEVER, M.D.

ENID

"Time marches on!" And in its unchangeable and plodding course has marked the end of the career of several of our colleagues both in the profession and in our chosen specialty. We pause to pay respect to these men who have been honest in the discharge of their obligations to humanity and have left many noble and enduring qualities to be emulated and used as a guide and pattern to those of us who must pick up their obligations and discharge them as worthy brothers in a beloved fraternity should do.

Some of our number will be missed more particularly by the profession, since during their life they lent much energy in keeping alive and active the Medical Society. Others nearly unknown to the sections and profession but idealized and loved by the patients and society are just as important in their sphere of activity as the first.

To all we pay our respects for their admirable qualities, both professional and social; and to their families we extend our sympathy and if need be our help as our token of consideration for the services that they have rendered to our profession.

Ever so often in our business we take invoice to see in terms of dollars and cents whether we are getting ahead, or suffering loss. As a profession it is well for us to stop long enough every now and then, to evaluate the esteem with which we are held by the community at large. It is so easy for us to become so enwrapped with our own affairs and our professional duties, that we become careless of the consideration by which we are valued by our community. It is both easy, and common for one to become more or less an introvert because of these facts. All of us must be on our guard to ward off such indifference. It is not enough to be capable in the

treatment of patients, we must also be popular and fascinating to them. Much of the slip in favorable consideration by the public for the profession is due to this lack of participation by the profession in the issues that are of more or less importance to all alike. To fail to give our talent, be it great or small, in the community life of our locality is to allow our relations to suffer the consequent disregard, unfavorable criticism and many times positive disapproval. This is all due to the misunderstanding that develops because there is lack of positively known connection by the physician to the issue thought to be important to the life of the community.

I personally think we know many things in our own profession of scientific interests to the laity that we should, as the only doctor of a town or as the doctors of a town where no medical society exists, impart a lot of this knowledge directly to the people. By such action and interchange of opinions, much will be learned by both the doctor and the individuals who make up his patients. The other branches of the healing art are continually trying to sell their concepts of what they profess to possess. The result of all of this is that a portion of the public has no definite knowledge of the difference between an osteopath, chiropractor, horse-doctor, veterinarian, optometrist, optician, oculist, or M.D. We can do much to cause a clearer understanding of the difference in how the various branches of healing treat and heal if we will explain such things every time the opportunity affords.

Medicine has much it should be proud to present. Dr. Ramon Posse, pioneer South American plastic surgeon, was sent to the United States by the Argentine government to study American hospitals and medical centers. He is in a position to contrast American and European methods because he has just finished a four-year study of medicine and medical research in

*Chairman's Address, Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

France, Germany and Austria. Should the government of Argentina follow Dr. Posse's suggestion, young Argentine medical students who, almost to a man have been going to Europe for advanced medical study will in the future come to America. He says "the United States is far ahead of health-insurance-ridden Europe in the matter of advanced medical study."

The sections of scientific medicine of the United States represent the foremost in the world today. The sections of ophthalmology and otolaryngology of the American Medical Association are second to none in programs and original research work being produced.

OBSERVATIONS

We know that drainage from the antrum takes place through the natural opening in the middle meatus. It makes no difference if there be a permanent large hole in the lower meatus, drainage will occur through the normal opening. This knowledge explains many failures in attempts at cures of the antrum by efforts of drainage alone.

Allergic conditions in the nose is a very definite etiologic factor in many cases of obscure headaches. Occasionally these simulate an eye headache. Some mild well-directed treatment for these conditions is most greatly appreciated by such sufferers. In my hands better results are obtained from ionization of antrums, for infection, than from any other method of treatment. I am sure ionization has a valuable place in selected cases in the field of otolaryngology.

The operative work that is being done in the study of glaucoma by Barken, I feel, will give us an operation that will have some real and lasting benefit.

The effects of vitamins upon the development of the eyes in the embryo promises some very interesting, enlightening and effectively beneficial facts that may be made useful, if adopted, in the prevention of anomalies and blindness.

The tears have a definite lysozymatic action. In cases of ulcers, interstitial keratitis and all other cases marked by epiphora, there is a lessening of the lysozymatic action of the tears which probably explains why these cases are so resistant

and unresponsive to treatment. Whether this is due entirely to dilution or to alteration in the lysozym due to the disease is not known.

Inisikonja has in the past few years come in for its share of attention. No doubt, we will eventually work out a standardization of the application of the facts now known, which will enable us to render comfortable a certain percentage of people who suffer from refractive discomfort in spite of our present most meticulous refractive methods.

I am certain that all of us would improve our refractive results if we would adopt as routine practice and make use of a good retinoscopy.

There is much being done to stimulate the orthoptic branch of ophthalmology and while in my hands it has been disappointing on the whole, as a procedure for a lazy man, yet I realize that it has possibilities that may justify its practice in properly selected cases.

Infectious mononucleosis is coming in for its share of attention. I would like to know something definite about it. I recently treated a case with twenty thousand units of antidiphtheritic serum and two shots of bismuth that immediately cleared up. Treatment was given on Thursday and patient was practically well the following Sunday. After I had given the antidiphtheritic serum, I had the local laboratory give me an opinion on a couple of smears that I had taken directly from the throat; they reported no diphtheria but fusiform bacilla and spirillum. Following this, I received a positive laboratory diagnosis from one of the most authoritative sources in the state that this was a case of mononucleosis; and that it would be some three weeks in clearing up. I am not certain that "infectious mononucleosis" is a disease entity. I am of the opinion that this blood syndrome results, probably, from some several infections and is of no more significance than a leukocytosis with a particular nuclear shift.

One thought that I want to make "stick out" is that we can think of this new, nice sounding diagnosis, but like all other things new, let us not forget that a good clinical eye coupled with more or less ex-

perience is the greatest and surest means of diagnosis that is given the medical man for his reliable and constant use.

I don't want to be understood as undervaluing or decrying the use of the laboratory. I believe that the majority of the profession and their patients would be better off, were they to use the laboratory more.

Let us, however, never depend on or

allow the laboratory to determine what diligent observation constantly reveals. To lean too heavily on the laboratory lessens one's resourcefulness and dulls our acute perception of evident symptoms.

I would dislike very much to be deprived of the valuable aid rendered me by the laboratory. I refuse to be ruled by its findings except in cases of acknowledged-positively known facts.

Some Remarks on Prostatic Resection*

E. HALSELL FITE, M.D., F.A.C.S.
MUSKOGEE

In 1934 I wrote a short article which summarized my beliefs at that time with regard to prostatic resection. In reviewing that article before writing this paper I was surprised to find how little my views had changed with regard to what I consider the essentials of prostatic resection. I have learned many things about resection since then both by my own experience and by the experience of others but somehow the impressions which I received from my first fifty cases seem to be more or less those which I have today.

It is a unanimous opinion among all authorities that prostatic resection is not a minor surgical procedure but is a major procedure and is fraught with all sorts of dangers and pitfalls. It is a procedure demanding meticulous attention to details at all times. Furthermore, it is a procedure which should only be attempted by a skilled, well-trained operative cystoscopist who has made a thorough study of the procedure. The general surgeon and the occasional cystoscopist had better for his own sake, as well as the patient's, leave the procedure strictly alone and if he must do prostatic surgery had better confine himself to the suprapubic route by which fairly good results can be obtained with scarcely any special training or skill. I don't believe the urologist need fear that the operation of vesical neck resection will

ever be taken from him by the general surgeon. It is too difficult and too technical a procedure.

My views of what constitute adequate preparation for a vesical neck resection have changed somewhat. I have a definite routine for examination of these cases to which I try to adhere as closely as possible. This includes history, physical examination, determination of residual, cystometry, Wasserman tests, a phenol-sulphon-thalein kidney functional test divided into five one-half hour periods, blood urea and creatinine determinations, a flat genito-urinary x-ray and air cystogram, electrocardiograph, and quite often cystoscopy. The patient is always passed upon by the internist as to the condition of his cardiovascular system and lungs. Cystometry is easily done and can consist only of determining the amount of fluid in the bladder that produces the first urge to void and the complete capacity. The first urge to void or feeling of fullness should come between one hundred fifty and two hundred fifty cc. in normal bladders. This test and the Wasserman tests will rule out neurologic or cord bladders. Quite frequently a tabetic bladder may be seen where there is apparently some hypertrophy of the prostate, the resection of which without relief of residual or symptoms is rather embarrassing to the resectionist.

The phenolsulphonthalein test divided into five one-half hour periods gives an

*Chairman's Address, Urologic Section, Oklahoma State Medical Association Annual Meeting, Tulsa, May, 1937.

idea of whether the kidney function is delayed. If the high point is in the first periods the function is probably as good as can be obtained, while if it is in the last ones treatment may improve the kidney function. This test together with the blood urea and creatinin gives a satisfactory estimate of the kidney damage. Generally I consider if these are satisfactory, the cardio-vascular condition is satisfactory, and the patient is free from temperature that the patient is ready for operation.

Cystoscopy, pre-operatively, is done if I consider there is some feature of the case which should be cleared up before operation. However, where possible the procedure should be avoided because of the frequency of severe febrile reactions following it in these old men.

The patients are not now put through any period of pre-operative catheter drainage unless there is a large residual which should be gradually decompressed, a much decreased and delayed kidney function, or there is severe urinary infection with temperature. The catheter drainage increases the chance of infection, especially epididymitis, and prolongs hospitalization. In cases of severe urinary infection, cases which are quite debilitated and cases of severe cardio-vascular disease a suprapubic drainage is often the best procedure. Following the drainage the patient may be sent out of the hospital with the suprapubic drain still in place to wait several months if necessary before returning for resection. Some men contend that if a suprapubic cystotomy is done the patient might better be later handled by suprapubic prostatectomy, but I do not agree in this as I am sure I have handled several patients by suprapubic cystotomy and resection with very little reaction who could never have survived a suprapubic enucleation of the gland. The suprapubic cystotomy also lessens the danger of hemorrhage following resection.

At operation all the prostatic tissue projecting into the urethra should be removed. The lateral lobes should be resected to such an extent that the bladder walls slope directly into, *i. e.*, are flush with, the prostatic urethra. The median lobe tissue should be resected until the trigone can be seen from the region of the veru and there

is no obstruction at the point where the trigone meets the resected area. There is always an apparent rise at this point and care must be taken not to resect the whole trigone in removing the apparent rise. A retrograde telescope is a great aid here in determining when the median lobe has all been resected. Davis advises resecting the lateral lobes within the prostatic urethra until when viewed from the veru they present a scooped out appearance with the narrow points at the vesical neck and veru. Great care should be exercised to locate and not resect the veru as this is the guide to safety. Resection of gland beyond this point or extensive coagulation in the region of the veru may injure the external sphincter and result in a permanent incontinence. The resection of the gland should be extensive enough to thoroughly remove all obstructing tissue and tunneling or furrowing the gland in the hope of shrinkage is to be condemned. However, it is my practice when the question arises as to whether or not enough gland has been resected to stop a little short rather than to go too far. There can always be another operation.

Hemorrhage seems to be the complication most often occurring. The best insurance against hemorrhage is to be sure of removal of an adequate amount of tissue and to control all bleeding in the operating room before sending the patient to his room. As little coagulation as possible, however, should be done as those cases that have had extensive coagulation are more apt to have severe secondary hemorrhage. I have had one case of primary hemorrhage which resulted from my sending a case from the operating room before his blood pressure had stabilized. Within an hour he was having very bloody urine. He was returned to the operating room and one bleeding point coagulated clearing the urine. My two cases of secondary hemorrhage both occurred in men who refused to believe the procedure was dangerous and did not follow instructions. The hemorrhages occurred on the seventh and eighth days, respectively. In neither case after evacuation of the clots could a bleeding point be found.

Hemostatic bags, such as the Jarman bag, are of great value in controlling post-operative oozing. I, however, had one dis-

agreeable experience which I will pass on. Following cessation of any oozing in a case in which I was using a bag I removed about two-thirds of the fluid in the bag and left the rest in to act as a self-retaining catheter. The patient proceeded to pull it out that night dilating the external sphincter or tearing it and the man has been incontinent for six months with no apparent improvement. This is the only case I have had that has developed permanent incontinence. Other urologists have told me that they have had temporary incontinence result in cases where they have used bags, particularly where they partially deflated them and left them in for a time.

My post-operative treatment is very simple. A No. 24 F multiple eye soft rubber catheter is placed in the urethra as an indwelling catheter. This is connected by sterile rubber tubing to a sterile bottle at the side of the bed. The patient is then given water by mouth and saline intravenously to irrigate the bladder by means of the urine. The nurse watches the catheter to see that there is a constant drip and in case the catheter becomes stopped by a clot she may irrigate the catheter and attempt to remove the clot by suction. If any difficulty is experienced she is to call me immediately and not continue in her attempts. I believe that it is almost impossible to keep these patients from developing some infection in the bladder but every sterile precaution should be taken and frequent irrigation of the catheter is one of the best ways I know of assuring a full blown infection.

The catheter is removed in from one to five days, according to the clearing of the urine and other factors regarding the patient. It is preferable to remove the catheter in from twenty-four to forty-eight hours. Leaving it in longer predisposes to urethritis and stricture of the urethra. If the patient is able to void a good forceful stream the catheter is not reinserted. There are a certain number of cases who, due to edema or inflammation about the bladder neck, will be unable to void at first. In these I usually insert a small catheter, fourteen or sixteen F, and wait two or three days longer. They are then usually able to void satisfactorily. If they are not it generally means that more tis-

sue has encroached on the urethra and a second operation is necessary. This is sometimes unavoidable and should be considered in the pre-operative talks with the patient to prevent embarrassment. I have had to operate about four cases the second time, one unintentionally. One case with a large prostate and severe diabetes was operated three times with a final excellent result.

My series consists of something over two hundred resections at the present time. These have varied from median bars to huge prostates and have in no way been selected cases. I have not found it necessary to do a suprapubic prostatectomy since I started resections and I am sure I have resected some cases who could not have possibly survived a prostatectomy. I have had one death which occurred about seven days post-operatively, due to a septic femoral thrombosis with general septicemia. One patient who had had a previous apoplectic stroke developed a hemiplegia on the third post-operative day and died about six weeks later. If both of these cases are considered operative deaths the mortality would still be slightly less than one per cent.

The majority of men writing on resection concede that resection is not applicable to huge prostates. I, however, believe that by multiple operations these can be better handled than by prostatectomy or at least as well. If in dealing with a large prostate I meet with marked bleeding I cut away as much as possible, control the hemorrhage and then wait a week and repeat the operation. At the second operation the bleeding is usually negligible and the resection much more simple.

In the management of carcinoma of the prostate, I have found resection of great value. The obstructive symptoms are relieved as much of the pain for some reason. In the few cases I have resected I have not yet had to repeat the operation though all are under three years as yet. There is no doubt in my mind that the procedure is the most satisfactory method I have tried for the management of these cases. Of course, it is only palliative and not curative but any procedure which will bring comfort to this most distressing type of case is certainly a boon.

In closing I want to condemn a practice that will certainly help to bring discredit on the procedure of resection and injure the reputations of resectionists who indulge in it. That is the practice of being a traveling urologist, or the urologist having an internist, general practitioner or general surgeon in a small town prepare a case for operation and decide when the patient is ready. The urologist then dashes up

spectacularly, resects the case for him and then hits for home, leaving the after-care to this inexperienced man. Those who indulge in this kind of practice are sure to have many complications if not deaths. I insist that anyone desiring my services come to me rather than my going to him, and I think this is the safest procedure for the patient and the most desirable one for me.

Medicine Versus State Medicine*

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During the past few years there has been much agitation about the cost and distribution of adequate medical care. This is a natural outgrowth of the changing pattern of life under altered social, economic, educational, industrial and political conditions as influenced by a period of unprecedented scientific and mechanistic progress. However, physicians and patients calmly surveying the problem in the light of experience are convinced that the people of the United States will not want any form of socialized medicine if they will first take time to carefully study our present system of medical care, and then compare the relative costs and the results achieved under this system with those reported in various European countries where medical service is largely under government control through some form of compulsory health insurance.

Unfortunately the American people have the reputation of being "down on what they are not up on." In this ever-changing, fast-going, restless, highly technical, mechanistic age, it behooves us to move slowly when we are dealing with the vital agencies which have to do with "life, liberty and the pursuit of happiness." We should be cautious in our response to the high sounding call of "social and economic security" lest we be persuaded to "jump from the frying pan into the fire."

Your attention is called, first to medicine as practiced in this country today. Medicine is a school of thought sustained and vitalized by the continued acquisition of knowledge and the application of scientific facts. In the fifth century, B. C., Hippocrates, the recognized father of scientific medicine, broke away from magic philosophy and religious dogma and placed medicine under the rule of reason.

The practice of medicine is an art which finds its origin in "the primal sympathy of man for man." Though Hippocrates freed medicine from religious dogma, he was careful to preserve the spirit of service, which is religion's most vital contribution. The art of medicine antedated the science of medicine, however the broad foundation laid by Hippocrates and the impartial spirit of service opened the way for science. Today the art and science of medicine go hand in hand, and the highest interests of humanity demand that they remain inseparable.

Medicine accepts everything useful in the prevention and cure of disease and the alleviation of suffering. It is interesting to note that Prof. Theodor Gomperz, in his four-volume work on the Greek philosophers of the fifth century, B. C., refers to the oath of Hippocrates as a "monument of the highest rank in the history of civilization." Gomperz also recognizes the thoughtful and logical sources of medicine when he devotes the first chapter, entitled

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"The Age of Enlightenment" in Book III, to a discussion of "The Physicians," thus according them first place in the advance of civilization. The Hippocratic oath dealt with medical ethics, placing emphasis upon the interests of the patient. Throughout the ages, the principles laid down in this remarkable document have served as a guide to physicians and a protection to patients. Four hundred years after these principles were propounded, they were found to be in harmony with the teaching of Jesus Christ, the great physician. Today they sustain the moral integrity of the medical profession and help to maintain the intimate personal relationship between physician and patient.

Medicine successfully weathered the Dark Ages and emerged with its accumulated treasures. It has been said that "Greece arose from the dead with the New Testament in one hand and the works of Aristotle in the other." It might be added that Aristotle, Hippocrates and Galen furnished the foundation for medical teaching and that the medical teachers were steeped in a knowledge of the humanities and were largely instrumental in restoring interest, not only in the art and science of medicine, but in all other cultural influences.

Rapid strides in the art and science of medicine have ever safeguarded and guided the progress of civilization. Through the heroic and sacrificial pursuit of science, and the conscientious application of its revealed truths, medicine and sanitary engineering have adequately matched the needs of a restless mechanistic age. Unfortunately only physicians fully realize how well the challenge has been met. With the rapid progress of transportation and the consequent intermingling of all nations, with their varied diseases and their racial susceptibilities, we would have been wiped from the face of the earth if we had not been protected by modern methods of prevention and control.

Without sanitary engineering and other preventive measures, the great cities of the world would succumb to disease within the short period of a few weeks. These achievements have come through accumulation of knowledge and skill, as a result of careful observation, scientific deduction and experimental methods.

For the benefit of the antivivisectionist, attention is called to the fact that not only have animals been mercifully sacrificed for human welfare, but members of the medical profession have voluntarily submitted to experimental methods at the risk of life, and some have made the supreme sacrifice in order that we might live.

Medicine has to its credit a long list of discoveries and inventions which have to do with the most vital interests of humanity. With few exceptions, these discoveries and inventions have come through individual effort. If they had been protected by patents, capitalized, commercialized and paid for in proportion to their relative value, physicians and their families would now be in possession of much of the world's wealth. The members of the medical profession have preferred to say, this will prevent or cure disease; this will relieve suffering; this will save life; this is good for humanity and must be made available for all.

In this extravagant, semi-idle, swiftly-moving, luxury-loving, high-powered age, the cost of medical care has necessarily increased. However, two things are worthy of note: the physician has more than shared the cost and he has given much more than medicine could have offered in any previous age. Mechanistic, scientific, and highly technical diagnostic and therapeutic methods have not only taxed the physician's skill and ingenuity, but they have touched his purse with a heavy hand. It is difficult for the public to realize that the increased longevity, safety and comfort now available through modern medicine is out of all proportion to the increase in cost of giving adequate medical care. Since physicians throughout the history of medicine have refused to profit in a large way by their discoveries and inventions, their opportunities for the acquisition of wealth are self-limited and their way to heaven should be much easier than the progress of a camel through the eye of a needle.

Humanity carries a heavy spiritual burden which only the wise family physician can lift. Even the minister can never guess what the family doctor knows. The more profound the secret, the more galling the

spiritual burden. The family physician, endowed with free initiative, is not a reformer; he is a mender. He takes broken bodies and lagging spirits and gently repairs damaged parts. He seeks to bring about the best possible spiritual and physical adjustments without reference to social, moral, or financial position. Medicine as now practiced in the United States is fundamental; it attends birth, it sustains life; it prevents and cures disease; it relieves suffering; it inspires confidence, it dissipates fear; finally it contends with death; if need be, it witnesses the separation of soul and body; often it lingers to comfort those stricken and bewildered by this last great mystery of life's incomprehensible cycle.

For twenty-five centuries physicians have known what the public seems to have suddenly discovered. I refer to the fact that poor people are in need of medicare care. Physicians, more than anyone else, have realized the truth of Christ's admonition, "The poor ye have always with you." They have accepted the implication and for two thousand five hundred years they have freely and uncomplainingly cared for the poor. Naturally they wonder why the public should suddenly become so aroused.

A few years ago the author had occasion to estimate in dollars and cents the value of free medical services given by the physicians of Oklahoma City. A conservative estimate based upon a very low fee scale indicated a total of approximately one and one-half million dollars annually. Available records indicated that members of the medical school faculty alone poured through the channels of the University and Crippled Children's Hospitals free services amounting to nearly one million dollars. The Oklahoma City physicians are giving in free medical services five times the total budget of the Community Fund; approximately ten times the budget of the Chamber of Commerce; and more than one-half the total cost of the city government, including the public health program.

I submit certain questions for your consideration: Would there be any economy in replacing the present plan with a regimented, tax supported form of socialized medicine, under an expensive bureaucratic con-

trol? Would it not be unfair to both physician and patient to disturb the intimate personal relationship which is possible under the present plan and often so essential in the solution of serious problems? Are the people of the United States ready to accept the cold impersonal services of an assigned government medical employe, or do they prefer to retain the right of choice with the hope of intimate, confidential, sympathetic bedside care?

Before deciding to advocate any change which will threaten the integrity of the medical profession and rob the patient of what medicine has to offer, every individual should carefully consider his own personal interests. Remember that in spite of social, religious, political and economic upheavals, the science of medicine has held fast the golden thread of truth. With undaunted probity, it has faithfully pierced the zigzag course of civilization and now stands efficient, ready and willing to serve if spared the withering hand of bureaucratic control.

It has been said that American medicine is on trial and that the United States is facing some form of socialized or state medicine. In this free country, the people should be the judge. Next to religious freedom, comes medical freedom. There should be no lack of interest, no blind yielding to political and socialistic coercion, no passive washing of hands with the hope of shifting responsibility. After all, medicine is individual; you must make your own decision.

The above brief discussion indicates what medicine is, what it has done, and what it may do in the future if kept free and unhampered. Let us now look socialized or state medicine squarely in the face and exact an honest admission of its purposes and possibilities.

Socialized medicine may be brought about in several different ways. In the last analysis, it means medical care provided for and supported by groups of people. These groups may function independently or in cooperation with government agencies.

State medicine is socialized medicine offering medical services supplied by government employes who are paid out

of tax funds. This system usually takes the form of so-called compulsory health insurance and the costs are paid out of a fund which is usually composed of taxes exacted from the wages of employes, matched by the employer from income or capital, and in turn matched by the State and Federal Government.

The evils of such a system are obvious to any thinking person. Yet they are so numerous and so vital it is difficult to choose for such a short discussion as this. I can think of no better way to bring the problem home than to discuss some features of proposed legislation. One bill now pending in the United States Senate and to be known as The Federal Health Insurance Law, provides for a so-called state system of health insurance, which, in truth, is a sickness tax. There is no assurance against ill-health. The fund from which benefits are to be paid shall be equal to "six per cent of the total of all wages periodically paid by employers to employes." Not less than one-fourth of this fund shall be contributed from the state treasury. "The other three-quarters may be divided between employers and employes." The bill also provides for an annual appropriation of \$200,000,000 to be apportioned among the states to aid them in developing and maintaining adequate systems of health insurance. Each state system shall be examined by the federal board and when approved "the board shall, out of the sum authorized and appropriated, annually allot to each approved state system an amount equal to one-fourth of the state's total fund."

From the long discourse on administration contained in the bill, the following paragraphs are sufficient to show how public, casual, cold and impersonal bedside medicine may become:

"6. Administration: (a) The system shall be administered by a central state department, commission, or other agency or officer through a system of local public boards, bureaus, officers, or other agencies.

"(b) The state authority shall have the power to establish standards of administration for the system, to make all such rules and regulations as may be required for the administration thereof, and to

amend and modify any of the said rules and regulations from time to time as may be found necessary or desirable.

"(c) The system shall have one or more state and local advisory councils, the members to be representative of employers, employes, and the public and the professions furnishing the medical benefits and to serve without salary but with allowances for actual and necessary expense.

"(g) Provision shall be made for the removal, after a hearing on written charges, of any physician or dentist in general practice, surgeon, other medical or dental specialist, hospital, clinic, laboratory, or other person or agency from the list of those who have agreed or with whom arrangements have been made to furnish medical benefits provided by the system when the continued inclusion of such person or agency would be prejudicial to the adequate, proper, or efficient furnishing of the medical benefits."

In addition to the complicated set-up, the bill provides for a Federal Health Insurance Board to be composed of a Director of Health Insurance and two members appointed by the president with the advice and consent of the senate. The director shall receive a salary of \$11,000 and the two appointed members of the board \$10,000 each annually, with additional traveling and incidental expenses. The bill also provides an appropriation of \$200,000 for payment of the entire expenses of the board.

This constitutes a brief resume of the essential features of this bill, ostensibly designed to furnish an adequate health service and presumably drawn for the purpose of solving the so-called high cost of medical care.

First of all your attention is called to the fact that this bill provides medical services for only wage earners in certain brackets. It does not care for independent workers, shopkeepers, farmers, and other groups of employes; neither does it provide for the poor and indigent. Approximately it would cover the same group of 26,000,000 now on file under the Social Security Act. It is immediately obvious that the services will not be adequate in the matter of comprehensive coverage,

however the proposed group includes many who are able to pay for medical care. It is even more obvious that those covered by the provisions of this bill will not receive adequate medical care. Such a possibility is unthinkable; it is utterly impossible for the art and science of medicine to adequately meet the needs of suffering humanity under the domination and motivation of politically minded laymen endowed with the power and protection of bureaucratic control.

There is no such thing as an adequate, regimented, red-taped, push-buttoned, gadgeted, medical care. If you make a trade of medicine, you may ultimately expect the cold impersonal methods of a tradesman.

Leaving out of consideration the possibility of a "sit-down" strike, would you like for your physician, at the bedside, to spend his time filling out reports and requisitions in triplicate to be filed for public scrutiny in your local headquarters; in the office of your state board, and finally in Washington or Baltimore; when you are about to succumb to a consuming disease, an excruciating pain, a mortal fear or some mental obsession?

Under the orders of his lay board and the pressure of other assignments, would you like for your physician to hastily review your case and record the superficial facts to meet stereotyped requirements while burning with suppressed profanity because of the gross injustice of an unnatural relationship which threatens his self-respect, destroys his initiative, and robs you of his best efforts? Would you not prefer to have your family advisor, your physician of choice, sit leisurely at your bedside, willing and ready to give your story an intelligent and sympathetic hearing; first of all for guidance in the deliberate application of the art and science of medicine to your physical and spiritual demands, and second to make private, confidential records of your mental and physical condition and your professional needs, for his own personal files which are kept inviolate against all demands unless accompanied by your written authorization or a court order?

Reputable, reasonable, conscientious and intelligent members of the medical profession are opposed to all forms of socialized

or state medicine because there is no such thing as "security against sickness" and because there can be no "economic security" in any program which immediately doubles the costs. Physicians have sought in vain for justification of the claim that state medicine will reduce the cost of medical care and bring about a state of economic security. The Capper bill perhaps inadvertently spotlights the few who may achieve "social and economic security."

As you have seen, the bill provides specific plans for the removal of physicians and dentists upon the receipt of written charges, the same receiving salaries or fees, which, according to estimates based upon experience in countries having similar plans, will range from \$2,000 to \$3,000 annually. There can be no assurance of permanency or continuity of service under the present policy of political patronage, consequently there can be no economic security. There seems to be no provision for the removal of the lay administrators who receive from \$11,000 and \$10,000 down the scale; some being allowed additional sums for traveling expenses and for the vague, convenient, flexible term, "incidental expenses." Truly this seems to represent social and economic security, but not for the physician and patient.

Worthy of note is the fact that physicians and dentists must negotiate the longest and most difficult educational program known. Physicians must spend eight to twelve years after high school in preparation for practice. The cost is approximately \$2,000 annually. The bill contains no reference to required qualifications for lay board members and other administrators. Presumably they are to be chosen from the shifting sands of the political world. Under such a plan as that proposed, medicine will lose much of its present appeal, ambitious young men and women will seek professions and vocations with greater opportunities for independent self-expression and economic security. This will soon result in lower standards for medical education.

For a moment let us consider the detailed question of costs. The people of the United States are now spending from four per cent to four and one-half per cent of their income for medical care. The Capper

bill provides a state fund representing six per cent of total income from wages and salaries, the same apparently to be augmented by tax funds from the Treasury of the United States. In this country the plan is to be initiated by spending nearly twice as much for cold impersonal medical care as is now being spent for private care. We cannot expect administration in the United States to cost less. If the cost of present medical care is five per cent of income, we must figure that the cost of state medicine would be approximately ten per cent. Why double the cost for less? Not only has the cost of medical care increased under socialized medicine in other countries, but the deterioration in the quality of service is confirmed by the increase in malingering, in morbidity, and the mortality rate. This is not speculation, but a matter of record based upon statistical studies. The morbidity and mortality rates in the United States are lower than in the European countries now under compulsory health insurance. This is doubly significant when we take into account the fact that we are handicapped by having the colored race with marked susceptibility to, and high mortality from, certain diseases. Also a relatively large population in outlying sparsely settled sections of the United States where medical care is now inadequate, and where the cost of adequate care under any plan would be prohibitive. Neither of these groups would be reached through the Capper bill.

Under the proposed plan, each person in the designated bracket is compelled to participate. He is forced to pay into the fund according to his income and not according to established need for medical services. Would it not be better for the individual employe and better for his country if he would insist upon retaining his self-respect through independent initiative and attempt to budget for medical care and pay what he can when care is needed? The good family physician is always ready to meet the honest patient half-way; money is not all he gets out of medical services; he is grateful for being called, "he makes capital, makes knowledge, and therefore power, out of every case he has." Though he is entitled to an honest living, he would rather tighten his belt and go hungry than

sell his freedom for a mess of pottage mixed by a bureaucratic board.

Do not these pertinent facts cause you to ask the question: who wants compulsory health insurance? Certainly not the physicians who know so well what it would mean; obviously not the employes and employers when fully informed. Apparently the movement may be traced to uninformed or possibly designing politicians, to some public health workers, and to agencies and foundations manned by socially minded individuals who think in terms of the masses and forget that the finer things of life are individual, personal, sacred, and beyond the influence of common currency.

Finally, we wonder why so much public anxiety about the so-called high cost of medical care. Why not become concerned about the high cost and hazardous effects of cocktails, cosmetics, and confections; of high pressure salesmanship, radio-advertising and installment buying; of the high cost of legal advice with the wide variation of income in this profession and the shocking record of starving young lawyers; or the enormous cost of putting the world on wheels and the building of unsafe highways with their mounting mortality which promises to outstrip the most deadly diseases? Why not insure against the hazards of birth, the evils of heredity, the insecurity of love and matrimony, the coming of old age, and the certainty of death?

No doubt the courageous knights of old, in a world of universal and absolute safeguards, would have spurned the spineless devotees of so-called physical, social, and economic security and sought surcease through suicide.

Summer Diarrhea in Babies

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the twenty-four hour formula and replaced with eight level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextrin-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

Treatment of Gonorrhea in the Male

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CHAPTER I

HISTORY

Gonorrhea has long been a disease without dignity. Its treatment is too often ineffective, even to the point of neglect. The medical profession in the past has accepted it, as far as therapy was concerned, with what might be described as a sense of condescension and futility. This apparent indifference, no doubt, is partly due to its being so intimately related to venery, with all the accompanying taboos of sex, as well as a most disappointing response to treatment.

It would seem that a disease so prevalent and filled with the potentialities for harm would have thrown a direct challenge to the profession, for at least its amelioration, if not eradication. Because of this lack of interest we find the treatment rendered today differs little in its procedure or benefits from that prescribed fifty years ago. As a matter of fact, by some it has been stated the modern management of the disease, taken as a whole, actually instead of doing good promotes harm. A rather serious indictment when one compares the progress made with other ills of mankind.

There is no more important detail in the intelligent care of the patient afflicted with gonorrhea than an accurate history. Physicians, circumspect in their handling of many other conditions, prove strangely lax in this regard when encountering a case of gonorrhea for the initial time. Frequently the patient is started out on a routine treatment without even the simple preliminary of a few perfunctory questions, which information to a vital extent dictates not only the particular type of immediate treatment but proves invaluable for future care of the case.

Practically, it is essential to determine: How long the individual has had the disease; how severe it is; has he ever had it

before; and what has he done for it. The questions asked the average patient may be outlined somewhat as follows:

1. Of what are you complaining?
2. When did you have sexual contact?
3. What prophylaxis, if any, did you take?
4. When and in what manner did you start giving evidence of being diseased?
5. How has it progressed?
6. What treatment, if any, have you done?
7. What effect has it had on your disease?
8. Are you having much pain?
9. Do you have any marked frequency of urination?
10. Is there any pain at the end of urination?
11. Is there any pain in your testicles?
12. Have you had any bleeding?
13. Have you ever had a similar attack before? If so, what did you do for it and how long did it require to get well?
14. Have you had any signs and symptoms, even of a minor character, which suggest that you may not have been completely cured?

So far as the immediate type of treatment indicated, we must be guided almost exclusively by the severity of the infection, as manifested by the signs and symptoms. Questioning is necessary because we not only evaluate the intensity of the disease by the physical evidence obtained on examination but the symptoms complained of by the patient. The fact that an individual has only a moderate discharge does not mean he would be able to tolerate routine treatment. He may be having marked terminal pain with frequency that suggests an acute posterior urethritis, de-

manding systemic management for the time being, and not local therapy.

The type of prophylaxis taken by the patient for the prevention of venereal infection at the time of exposure, because of its irritating effects, may produce such a urethral reaction it may mimic a gonorrheal urethritis. The knowledge of what prophylaxis has been taken may explain fully a profuse discharge that seems to be unusually free from organisms.

The amount of treatment already administered must be known in detail, chiefly the character as well as the number and strength of solutions given intraurethrally, and also what effect they appeared to have had on the appearance of the disease. It is not unusual to see what has apparently begun as a mild infection to have been aggravated to annoying acuteness by the form or mode of therapy given. The use of astringents early in the course of the infection also markedly modifies the appearance of the clinical picture.

The proper management of a complicating posterior infection is an important integral of treatment and influences in no small way not only as far as early cure is concerned but the ultimate outcome of the case. It is essential we have accurate knowledge at all times of this complication. Apparently insignificant signs and symptoms will warn the physician of a brewing posterior urethritis, which information causes him to modify the treatment in order to allow the process to subside uneventfully. Carelessly chosen procedures may encourage the infection to flare into fulminating activity.

Gonorrhea has the unfortunate characteristic of lying for long periods of time dormant within glandular structures, to be flared at times into activity for short periods. During these acute attacks such exacerbations resemble freshly contracted infections; therefore, it is important to determine whether the individual has had the disease before and whether it appeared to have been thoroughly cured. One must remember also the frequency of a non-specific prostatitis which, during an acute attack, may also simulate a gonorrheal urethritis.

Complete records of each case should be kept. Most of the information obtained is

of a negative character and through the medium of abbreviation may be placed within a few lines. This, with the progress notes of the individual while under treatment, need not encompass more than the doctor's usual record card. The completed form not only proves helpful as a means of reviewing the patient's progress from time to time but the cumulative value of many cases, accurately recorded, strengthens our confidence and knowledge of the disease as the experience of the years pass.

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CHAPTER II

EXAMINATION AND DIAGNOSIS

When seeing for the first time a patient who has a urethral infection, the physician, in order to obtain an intelligent basis for the proper treatment, should mentally answer a few questions regarding the disease. Is this truly gonorrhea? If it is gonorrhea, in what clinical stage does it appear to be? How acute is the infection?

Before the era of accurate bacteriological diagnosis almost all urethral discharges were considered gonorrheal in origin; non-specific infection from other bacteria being practically a non-entity. To the present day, notwithstanding the ease of obtaining accurate information, many doctors indict every individual who presents a purulent discharge as having gonorrhea. Fortunately not all urethritis is due to the gonococcus. Approximately ten per cent will be found to originate from other types of bacteria. Aside from the fact the treatment is practically the same, it is of tremendous importance to the patient's peace of mind whether he has gonorrhea or some more benign affliction. Rarely such an error could lead to a domestic catastrophe in the married.

Because of technical simplification in suspected instances of gonorrhea, there has developed a tendency to use methylene blue in place of the Gram stain as a method for the examination of urethral smears. This practice is to be discouraged as error is likely to be encountered in the morphological differentiation of the various types of bacteria present. It is true in the acute gonorrheal urethritis, wherein we find many typical intracellular organisms, the methylene blue method may be sufficient; but in the chronic manifestations of the

disease or in the non-specific infections an identification of the organism may be impossible. Not infrequently the staphylococcus, streptococcus, or micrococcus catarrhalis may in some stage of their life cycle so resemble the gonococcus that experts are deceived. Certainly it is essential to do a Gram stain where a legal question as to diagnosis is concerned.

When it has been finally decided that gonorrhea exists our next problem is to determine what clinical phase of the disease is present. Is it a simple anterior urethritis or is it one complicated by posterior infection? Has it been recently acquired or is it the active manifestation of a latent infection present in the urethra or adjacent structures?

The patient is requested to void two ounces in each of two glasses, voiding urine that has been retained in the bladder for at least two hours. As a rule the first glass will show varying degrees of cloudiness due to the washing out of accumulated purulent material from the anterior portion of the channel. If the second glass shows pus we conclude the infection has passed the external sphincter and a posterior urethritis is present. Clear urine found in the second glass signifies there is probably no posterior urethritis. It is obvious one must be sure that turbidity is not due to precipitated urates or phosphates. The addition of acid and the application of heat will settle this point. In the presence of a posterior urethritis rather early in the course of gonorrhea it is well to question the patient closely as to any acute inflammatory symptoms that may be present. If there are symptoms, no matter if they be very insignificant as far as the patient is concerned, care must be exercised with the first few treatments lest the process be flared to fulminating activity. A slight frequency, some terminal discomfort, etc., should be a "red flag of warning" to the physician who undertakes to treat the disease. As a matter of fact, accurate knowledge of the extent of the infection in the first few weeks of gonorrhea is impossible. Extreme conservatism and careful treatment must be exercised until the limits of toleration toward therapy are definitely known.

Acute gonorrhea in the beginning in dif-

ferent individuals is of varying degrees of severity as far as the inflammatory reaction is concerned. Some patients have an extremely mild infection, a few may have a rather acute reaction, while others may present all gradations of severity between the two extremes. Because of this difference in clinical intensity of the disease it is necessary for the doctor to somewhat evaluate the type of infection as far as inflammatory severity is concerned, as is presented on the initial visit of the patient.

Hyperacute urethritis demands a very different type of management than that accorded relatively mild infections. As a matter of convenience it is well to mentally classify cases into three types from this standpoint; mild, moderate and severe. Mild cases are those that appear limited to the anterior urethra, show little discharge, and apparently give rise to few, if any, symptoms on the part of the patient. Moderate infections are of a more pronounced inflammatory character. The discharge is profuse. There is some redness and swelling of the glans and the patient complains of burning on urination. Severe cases have an extreme inflammatory reaction, profuse discharge, swelling and redness of the glans, acute pain on urination, and there may even be systemic evidence of toxic absorption, fever, and malaise.

It is good judgment even when one feels fairly certain the urethritis is not due to a fresh infection, but secondarily from the "flare up" of a chronic prostatitis, to dispense with prostatic examination at the first visit of the patient. However, in a few instances where such a diagnosis is obvious and the inflammatory reaction is extremely mild, one may carefully examine the prostate by way of the rectum, massaging the gland and examining the expressed secretion for pus. Prostatic examination and especially massage is never indicated in the earlier stages of gonorrhea except possibly when it is necessary to examine digitally per rectum the prostate for the presence of an abscess.

As a part of the physical examination, the physician should observe any anatomical defects, either congenital or acquired, that may be a factor in the subsequent care of the patient. Probably the most im-

portant is congenital narrowing of the urinary meatus. If an actual pinpoint meatus is present this will need correction as this usually plays a part in producing posterior urethral complications and is a detriment to early cure of the disease. One should use judgment in this particular as a moderate degree of meatal stenosis is of little importance. The term "pin point meatus" should be descriptive enough to portray the condition in question. Also the foreskin may be unusually tight or redundant, favoring the formation of phimosis or para-phimosis, which if not handled properly as far as cleanliness or retraction is concerned will become an annoying complication.

* * *

CHAPTER III

THE TREATMENT OF ACUTE GONORRHEAL URETHRITIS

In order to acquire an intelligent concept of the rationale for treatment of acute gonorrhea it is necessary to review one's knowledge of the disease as regards its clinical course.

Similar to many infectious diseases of a specific origin, it not only pursues a fairly uniform clinical pattern but recovery likewise comes through natural immunological processes. The exact mechanism of cure is as yet an unsolved problem. Probably there is slowly produced a systemic and local tissue reaction that ultimately in most individuals results in complete eradication of the invading organisms.

The fact that gonorrhea is more or less a self-limited infection and is cured by a personally developed immunity is of utmost significance to the physician handling the disease. Too often this basic principle is lost sight of in an impatient endeavor to speed recovery. Further, it is essential he should realize that often months must elapse before the defensive forces of the body are sufficiently potent to produce a cure. To do anything that does not reinforce or fortify the defensive response of the invaded tissues is to undermine the very foundation for cure.

The use of sounds, catheters, irritating medication or instrumental manipulation too early in the course of the disease may, by the trauma induced, lower the resist-

ance of diseased tissues toward the offending bacteria and further progression of the infection is favored. Chronicity and resistance toward subsequent treatment is often the end result of such so-called therapeutic procedures.

What is the duration of the average case of gonorrhea? It must be realized that primarily we are dealing with a disease of extreme variability, as far as time is concerned. Nevertheless there is an approximate average maximum and minimum number of weeks the ordinary patient is afflicted with the disease, provided he has satisfactory treatment. Six weeks could be stated an unusually short length of time and four months not an unwarrantedly long period. The average patient achieves recovery anywhere within eight to twelve weeks.

There is a tendency for textbooks to minimize the length of time necessary for a patient to recover from gonorrhea. Because of this teaching, students consider the disease an intractable, chronic infection when it fails to clear within six or eight weeks. They then attempt to use more stringent measures for its cure in the form of stronger medication, topical application, dilators, etc. Usually complications will ensue following such treatment that changes a simple infection, amenable to treatment, to one difficult to handle.

It is always good judgment to give the patient ample time to see whether he can get well with ordinary treatment, as often the natural forces of the body will remedy the situation. That is, it is better to wait an extra month or so as no harm can ever result by giving plenty of time, but irremedial damage may be inflicted by too early instrumental or other traumatizing methods.

It is well to discuss at this time the status of so-called abortive cures for gonorrhea. By abortion is meant the radical destruction of all organisms early in the course of the disease to prevent progression of the infection. Ordinarily, strong medications are used for this purpose. These are injected in the urethra with or without local anesthesia. It is pertinent to know that by the time signs and symptoms have developed the organism has en-

trenched itself in the deeper layers of the urethra and the time for a radical cure is well past. Obviously the futility of such "cures" is only too clearly apparent. The harm rendered a sensitive tissue by strong medications far outweighs any theoretical possibility of eradicating the coccus through chemical means.

Notwithstanding the efficacy of our modern antiseptics, together with their muchly advertised penetrability, no scientific evidence exists in the tolerated concentration they are used in the urethra that their bactericidal effect is potent but a small distance below the surface of the tissue to which they are applied. Abortive cures to be effective must be used in the sense of prophylaxis, that is, within twenty-four hours of exposure. If more time than this has elapsed the modern treatment of gonorrhea considers abortive cures an obsolete procedure and capable of resulting in tremendous harm.

As for the actual treatment of acute urethritis in its earlier phases, for years the drug most generally used has been the silver preparations. Evidently the silver salts have some peculiar therapeutic property either of a stimulative or tonic effect that aids in a curative way. That they are destructive to gonococcus must be considered only of incidental importance. Because they have a respected heritage of many past years empirical therapeutic efficacy should make us slow in discarding these valuable agents for other drugs. Certainly in the light of our newer knowledge a higher germicidal index should never be a reason to do so.

The silver protein preparations are the ones most commonly used. They have the advantage of exercising the same beneficial effect without the irritation incident to the stronger salts; that is, silver nitrate. Argyrol and neo silvol are the more popular examples of common trade preparations obtainable. A ten per cent solution of either drug is the maximum concentration used for the majority of infections that are not too acute. A preparation that can be inexpensively manufactured by any druggist is silver iodide, which is similar in appearance to neo silvol and compares favorably from a therapeutic standpoint with any of the better known similar

drugs put out by the pharmaceutical firms. It is used in the form of an emulsion of a ten per cent strength, which forms a viscous preparation that clings to the walls of the urethra for long periods of time. It is prepared simply by mixing in solution equal parts of silver nitrate and potassium-iodide, producing a precipitate of silver iodide. This is washed thoroughly to free it from the irritating potassium salt and made up in an emulsion with the aid of gum acacia. A ten per cent strength will prove absolutely non-irritating and if made with sufficient gum acacia is of a jelly-like consistency that seems to offer a protective and soothing effect to the inflamed mucosa.

The actual technic of urethral medication is an important integral of treatment. Many times the traumatic effect of poorly administered injections, either by the patient or on the part of the doctor, acts as a potent factor for the development of complications of the disease. One must remember that he is dealing first with an infection for the most part in its earlier stages is limited to the front part of the urethra; moreover he is treating tissues that are extremely intolerant to any irritant even when they are in their normal state. One needs only to observe the high dilution of silver nitrate necessary when it is to be injected into the normal urethra. This sensitivity is doubly emphasized when any pathological process in the form of infection is present. Therefore, if one uses undue pressure injecting solutions intra-urethrally or solutions that are the least bit irritating, he defeats the primary aim of treatment of the disease, as the reaction produced outweighs any possible good that could obtain from the medication.

The patient is instructed that it is not necessary to fill completely the whole channel; providing the medication bathes the anterior two thirds of the urethra is sufficient. Urination immediately before each treatment for the purpose of washing out all excess pus and detritus from the channel is an important preliminary of treatment.

A bulbed one-fourth ounce syringe with a blunt nozzle is filled with solution—the patient stands before a commode, as the standing position limits somewhat the

passage of fluid to the posterior urethra. The glans penis is held by the left hand, thumb and forefinger catching the dorsum of the glans. The medicine is slowly injected until there is a faint sensation of filling present. Approximately two drams will do so. No undue pressure is made and pain or any other discomfort is a sign that something is wrong; either the condition is too acute for local therapy, the medicine too strong, or the amount is too forcibly injected, or of too large quantity. The medicine is held in the urethra only a few minutes. If any discomfort is manifested it is immediately released. No particular advantage exists in retaining the drug an undue length of time.

If one is able to treat the patient regularly in the office one may use irrigations with very excellent results. Irrigations, unless they be under the guidance of a careful physician, may be exceedingly dangerous as the fluid pressure is traumatizing if excessive. It is suggested a one to eight thousand KMNO_4 solution be used by way of a reservoir placed not over two feet high above the point of injection, and directed in the urethra by means of a blunt nozzle instillator. During each irrigation care must be taken to see that the full force of the column of fluid is not allowed to distend the urethra, as injury is possible even at this height. For the most part irrigations could better be abandoned as in addition to a potential danger they hold towards the development of complications, they lend an air of complexity to the treatment of a disease that is deserving of the most simple therapeutic measures possible.

To detail dogmatically a routine system of therapy applicable to any certain phase of gonorrhea is to run the risk of deprecating the importance of individualization in each patient. The best results are obtained when the physician treats personally each individual, seeing him daily, not so much because the patient could not give the identical injection in his home but in order that the doctor may determine any slight intolerance to medication, or may observe early significant signs and symptoms of impending complications.

The successful management of gonorrhea depends not only on implicit obedience and co-operation on the part of the patient, but a sixth sense of intuition by

the doctor that enables him to see trouble approaching before it actually develops. Many times by a skillful therapeutic maneuver; the cessation of treatment for a day or two, the restriction of activities or the use of antispasmodics, one may prevent annoying if not serious complications.

Patients are divided into three classes, as has been detailed in the discussion of diagnosis, mainly for the purpose of simplifying their therapeutic management: mild, moderate, and severe. Patients with mild infections are given twice daily anterior injections of ten per cent silver iodide. Each day they should return to the physician's office and before each treatment the doctor should ask them if they have had any particular symptoms referable to the posterior urethra, such as frequency, urgency, pain in the bladder on voiding, or pain along the cord radiating to the testicles. They should pass their urine before treatment into two glasses, approximately "two fingers" quantity in each glass. The physician should note and chart the character of the discharge, whether it is increased or diminished, the appearance of both glasses of urine with particular attention to posterior involvement as shown by a cloudy second glass. The appearance of a cloudy second glass, while not an optimistic sign, is not discouraging and, providing there are no signs and symptoms pointing to an active reaction in the posterior urethra, demands no change in treatment. One should, however, be doubly cautious as regards treatment at the onset of posterior involvement as it may at the least provocation flare up to an annoying acuteness.

This simple schedule is adhered to for at least six weeks following the onset of the disease. As a rule such careful treatment of the anterior urethra will show a gradual diminution in the amount of discharge and a slowly clearing second glass of urine if there has been a posterior involvement. No attempt should be made to treat the posterior urethra before this time as harm may result.

If at the end of a month and a half of treatment there is a sluggish chronicity to the discharge and the second glass of urine remains shreddy and turbid, one may cautiously at first begin daily anterior-pos-

terior instillations with the same drug. The prostate may also be massaged by a finger inserted in the rectum and it is wise to examine at this time the amount of pus present in the expressed secretion. If a considerable amount of pus is found in the prostatic fluid, massages should be performed regularly every three to five days. If little pus is discovered one may dispense with massage, using the posterior instillation as the sole mode of therapy. With this sort of schedule the majority of infections will clear within three months. Infections longer than this should be handled as described in the section on prostatitis.

Infections that are of slightly more acuteness at first may be treated much like the above, with the exception the initial treatment should be only half strength; that is, five per cent, and only once daily. When the acute manifestations have subsided they are placed on the above suggested regime. With these patients one should be extremely cautious, seeing them oftener and observing minutely the effect of treatment, lest they be flared into extreme activity.

Severe infections of gonorrhea when first seen are probably the most important group to handle. What the physician does at this time determines to a large extent the ultimate outcome of the case. These are the individuals who present a profuse discharge accompanied by a considerable amount of pain and swelling of the affected organ. Treatment of these individuals according to the above scheme aggravates and intensifies their troubles. It is of extreme importance that no local therapy whatever be used in these cases. By local therapy is meant urethral instillations. One should treat the patients as individuals whose tissues are being overwhelmed by their infection, and by rights are sick enough to merit bed rest. The use of hot water soaks to the penis, hot sitz baths, the bowels kept open, a liquid diet, alkalization through the use of various drugs given by mouth, Santal oil gm. five to ten, three times daily, in order to soothe the inflamed mucosa of the urethra, and even codeine and aspirin if the pain is severe, may be indicated.

With the above suggested line of treatment only a few days will find the dis-

eased process subsiding and then one may very cautiously begin local measures, using a five per cent silver iodide. To carelessly prescribe injections when an individual has a hyperacute inflammatory urethritis is a reprehensible practice. Many longstanding chronic infections date their beginning from improper treatment at this time. A personal opinion also exists that many gonorrheal strictures in later life antedate from fulminating infections of the sort which have been mishandled during their hyperacute stage.

As a general rule one will usually find it unnecessary to change the type of drug during the course of treatment. One drug may be effectively used during the whole duration of the disease. One hears of the value of so-called alternating methods of treatment, that is, administering one drug for a week or so and then changing to another. There is little clinical evidence this is of any particular value as a routine form of treatment. Occasionally in a few cases, if desired, a change to a one-fourth or one-half per cent protargol in the latter stages of the disease seems to give an impetus toward cure. Likewise, the same effect can often be obtained by giving a few days rest from local treatment and then resuming as before. The change of medication or the rest period seems to give the cells a "breathing period," so to speak, in their struggle with the disease.

Minor variations in the technic of treatment such as described may be found helpful at times. One should constantly watch his efforts at all times and see they are directed toward helping the infected tissues rather than attempting to destroy the bacteria. Anything that produces a severe reaction of the cells is pernicious, at least until a maximum of immunity has been established towards the invading germ. As this very often requires months and is for the most part an unknown quantity, as far as time is concerned, the use of stronger drugs than are tolerated by the tissues, and traumatizing agents in the form of instruments may so undermine the defensive power of the cells that they allow the infection to become more strongly intrenched. Patience is the watchword for the successful treatment of gonorrhea.

(To be continued in June issue.)

BOOK REVIEWS

PHYSICAL THERAPEUTIC METHODS IN OTOLARYNGOLOGY, By Abraham R. Hollender, M.D., F.A.C.S., Associate in Laryngology, Rhinology and Otolaryngology, University of Illinois College of Medicine; Fellow of the American Society of Ophthalmology and Otolaryngology. With 189 illustrations. Cloth. The C. V. Mosby Company, St. Louis, 1937. Price \$5.00.

This book as a whole is recommended, not only for general practitioners and advanced students but for beginners interested in Physical Therapy. The author properly introduces Physical Therapeutic Methods in Otolaryngology beginning with mechanotherapy and ably proceeds to describe Diathermy, Short Wave, Ionization, Electro Surgery, Phototherapy, Ultra Violet Irradiation, X-Rays and Radium.

This is a splendid contribution in that it has presented in clear description and illustrations every phase of Otolaryngology.

"Benzedrine Sulfate" in Chronic Exhaustion

Nathanson (J. A. M. A., 108:531, February 13, 1937), studied "Benzedrine" (beta-aminopropylbenzene—benzyl methyl carbinamine) in forty patients complaining of chronic exhaustion. It was administered also to fifty-five normals, who answered a detailed questionnaire as to the effects of the drug.

Small doses (twenty mg. given in divided doses during the morning) gave satisfactory results in a high percentage of cases. Some unpleasant side reactions were reported such as dryness of the mouth, loss of appetite with consequent loss of weight, sweating and disturbed sleep, but these were relatively infrequent.

Favorable results included a sense of well being, increased mental efficiency and energy coupled with a greater capacity for work.

Of the twenty-five subjects who were given lactose tablets as controls, eighty-four per cent reported no reaction of any kind.

Allen, Wilbur and McLean (Proc. Cent. Soc. Clin. Res., November 6, 1936), also report eighty per cent improvement of symptoms in ninety-five cases suffering from melancholia, chronic fatigue or exhaustion.

Diffuse Adenomatosis of Colon

With the addition of two cases completed within the last year, their series now totals thirteen cases, in seven of which as previously reported, Fred W. Rankin and Allen E. Grimes, Lexington, Ky. (Journal A. M. A., February 27, 1937), removed the entire colon and rectum by multiple procedures. In six cases the colon was removed to the rectosigmoid juncture. These operations were undertaken for both adenomatosis and complications arising from diffuse chronic ulcerative colitis. In the earlier cases the more radical total colectomy was done for both lesions. Now it is reserved for chronic ulcerative colitis. The remarkable disappearance of diffuse rectal polyps following vigorous fulguration encourages the authors to save the rectal stump and anastomose it with the ileum. However, they condemn any method whereby segments of the colon beyond the rectosigmoid are preserved. They are a definite menace as a site of recurrent polyps and are beyond the range of protoscopic investigation. In this series there was one operative death following the second stage colectomy. Another pa-

tient died eighteen months following the completed operation from recurrence of carcinoma, which had developed on polyps and which was demonstrated at exploration.

Present State of Cystometry

D. K. Rose, St. Louis (Journal A. M. A., November 7, 1936), believes that the clinical value of cystometry lies chiefly in its identifying the bladder to clinicians as an organ of practical physiologic importance in differentiating all types of neurogenic from physically obstructed bladders, so that treatment may have a better foundation, and in offering bladder function tracings to explain symptoms and determine the results of treatment in dysuric bladders. Clinically, it quite alters the usually accepted view of bladder importance in prostate and bladder surgery, particularly in relation to infection. It differentiates types of dysuria after surgery, childbirth, trauma and disease or injury of the brain or spinal cord. For experimental work undoubtedly a continuous graph is necessary, but for clinical or bedside work methods of interrupted readings, that is, introducing fifty cc. and then taking a reading, are satisfactory. A second tracing at each examination is absolutely necessary, not to verify the first but to note on the second curve the influence of the first filling. In general the normal or irritable bladder is stimulated to decreased capacity and increased pressure while the low sensation type of neurogenic bladder shows diminished sensation with increased capacity after the distention of the first filling.

Ulcerative Lesions of Skin in Lymphogranuloma Inguinale

In a series of five hundred patients with inguinal lymphogranuloma Max S. Wien and Minnie Oboler Perlstein, Chicago (Journal A. M. A., January 2, 1937), observed twelve cases of ulceration. They present the detailed clinical reports of three of these patients together with bacteriologic and histologic studies. These three cases illustrate the types of clinical ulceration that may occur in lymphogranuloma inguinale: ulceration of the skin only—lymphitis, ulceration of the skin secondary to a previous lymph gland involvement and ulceration developing on an existing esthiomene. The bacteriologic flora of the ulcerations was thoroughly investigated. The organisms found were probably secondary invaders. Histologic examinations of the ulcerations were nonspecific. There was a uniform picture of ulceration, fibrosis and plasma cellular infiltration. Cases of superficial ulceration in the skin, resistant to the ordinary or specific methods of therapy, especially when occurring in the genitocrural area, should be tested with Frei antigen, diagnostically and therapeutically, in order to rule out the possible relation of the ulceration to inguinale lymphogranuloma.

Treatment of Encapsulated Brain Abscess

Edgar A. Kahn, Ann Arbor, Mich. (Journal A. M. A., January 9, 1937), outlines a procedure by which a chronic encapsulated brain abscess can be dealt with more easily. He has shown in his four cases that a brain abscess can migrate to the surface beneath a decompression, in the presence of increased intracranial pressure. In most cases of encapsulated abscess there is nothing to prevent their changing position under certain pressure conditions. Could all abscesses be drained at the surface under circumstances which would minimize the possibility of meningitis, the mortality would undoubtedly diminish.



THE PRESIDENT

SAM A. McKEEL, M.D.

Born in Tennessee, 1870

Graduated from Memphis Hospital Medical College in 1901.

Practice limited to Internal Medicine.

ADA, OKLAHOMA

THE JOURNAL

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

WITHOUT FOUNDATION IN FACT

The Oklahoma City press, by its political reporter, one McClintock, has made a very weak effort to make it appear that the State Medical Association is supporting some proposed legislation whereby the state would purchase and operate two hospitals, one at Clinton, the other at McAlester.

This advocate of State Medicine would make any sort of a crack in his hope to discredit organized medicine. His statement relative to this matter is without foundation in fact, as the Association has no interest in the matter except that we are all very insistent that should such purchase be made that these hospitals be

kept separate from the Medical School and its auxiliary hospitals.

The same individual contends that we are opposed to cooperative hospitals, which is entirely false, as we are for any program that would make hospitalization available to every one so long as the physicians' and surgeons' services are not peddled and sold with the hospital service.

This statement should make the matter very clear to any interested person who wishes to know the truth.

JUNE NUMBER IMPORTANT ISSUE

In order that the May JOURNAL may be issued on time it is necessary that all material go to the printer long before the State Meeting, consequently it will be impossible, in this issue, to give the report of the Annual Meeting or the minutes of the proceedings of the Council and House of Delegates. The June number will, therefore, be a very important issue as it not only will contain the information relative to the State Meeting but will be the Roster issue.

Editorial Notes—Personal and General

DR. JAMES G. RAFTER, Muskogee, is reported improved following a recent illness.

DR. CAROLINE BASSMAN, Claremore, is reported improved following an attack of bronchial pneumonia.

DR. A. M. ARNOLD, Claremore, is also reported recovering from a recent illness.

Appointments

DR. J. L. ADAMS, Hobart, has been appointed County Health Superintendent of Kiowa County.

DR. HARRY B. HALL, Boise City, has been appointed County Health Superintendent of Cimarron County.

DR. ROBERT M. CHURCH, Stilwell, has been appointed County Health Superintendent of Adair County.

OPENING FOR PRACTICE

Porum, in Muskogee County, population some 400, and an area of some 35 square miles, offers an excellent location for a practicing physician. The town has had a doctor of medicine since statehood; the most recent physician has retired.

RESOLUTIONS

DOCTOR CHARLES W. HEITZMAN

At a regular meeting of the Muskogee County Medical Society on Monday evening May 3, 1937, the following resolution was introduced and copies ordered sent to Mrs. C. W. Heitzman, 426 South Twelfth, Muskogee, Oklahoma, and Dr. L. S. Wilbour, Secretary Oklahoma State Medical Association, McAlester, Oklahoma:

WHEREAS, our friend and co-worker, Charles W. Heitzman, has been taken by death, and

WHEREAS, for many years he was a prominent member of our society and our profession, and

WHEREAS, his professional attainments and sterling qualities were known and respected by all of us and will be missed by us in the future;

BE IT RESOLVED, that the Muskogee County Medical Society hold of record this expression of deep sympathy to those from whom he has been taken away and a deep regret that his work has come to an end;

BE IT FURTHER RESOLVED, that a copy of this sentiment be sent to Mrs. C. W. Heitzman, and to the Secretary of the Oklahoma State Medical Association, and the resolution spread on the records of our Society.

W. R. Joblin, President,
S. D. Neely, Secretary.

DOCTOR I. PHILLIPS

On February 27th, Dr. Phillips "crossed over" to the great majority at the advanced age of seventy-nine years. Dr. Phillips had led a long, active and useful life, having been a member of the Missouri legislature before locating at Picher some fifteen years ago.

WHEREAS, Dr. I. Phillips had been a faithful and active member of Ottawa County Medical Association, never shirking any duty that devolved upon him by virtue of his membership in our Society, now

THEREFORE, BE IT RESOLVED, that we deplore the loss of our colleague and friend, who has rendered valuable services to our Society many times, and further we place a copy of these resolutions on the minutes of our meeting, and send a copy to the State Journal, and a copy to the bereaved family, and extend to the doctor's family our sincere and heartfelt sympathy.

Signed—Ottawa County Medical Society.

M. M. DeArman, M.D.
A. M. Cooter, M.D.
J. W. Craig, M.D.
Condolence Committee.

W. G. Chesnut, M.D., Secretary.

DOCTOR JOHN C. JACOBS

On April 2, 1937, at 11 a. m., Dr. John C. Jacobs, sixty-seven years of age, Miami, laid down his burden after a brief illness of angina pectoris. The doctor had attended a Chamber of Commerce dinner the day before his death and took an active part in the jollity of that occasion returning to his office about 2 p. m. About four o'clock Thursday afternoon he had a slight heart attack but did not go to his home until around 6 p. m. The next (Friday) morning the final summons came and he

"passed on" after an hour's suffering notwithstanding the use of powerful sedatives.

At his request a postmortem was held which showed a coronary thrombus.

At the first meeting following his demise, Ottawa County Medical Society enacted the following resolutions:

WHEREAS, our fellow member and personal friend, Dr. J. C. Jacobs, of Miami, Oklahoma, has been called from the field of his labors never to return, and

WHEREAS, we recognize in our colleague one of our most active and conscientious members and students, now

THEREFORE BE IT RESOLVED, that we deplore the untimely passing of our respected and loved member; that we recognize the fact that his place cannot be filled in our ranks, for he was one of our most valuable members.

BE IT FURTHER RESOLVED, that a copy of these resolutions be sent to the family of Dr. Jacobs; and a copy sent to our State Medical Journal for publication, and a copy placed on our records.

M. M. DeArman, M.D.
A. M. Cooter, M.D.
J. W. Craig, M.D.
Condolence Committee.

W. G. Chesnut, M.D., Secretary.

Treatment of Organic Arterial Obstruction by Alternating Suction and Pressure

Edward Allen Edwards, Boston (Journal A. M. A., February 20, 1937), declares that in cases of both acute and chronic organic arterial obstruction there is apt to be an associated spasm of the collateral vessels. This spasm counteracts the effect of the suction-pressure therapy and is not relieved by the treatment. He describes a device that furnishes warmth to the affected extremity while it is treated by suction-pressure. Such locally applied warmth is capable of maximal vasodilatation and increases the effectiveness of the suction. Moreover, the local increase in metabolism caused by the raised temperature assists in the processes of healing.

OBITUARIES

DOCTOR CHARLES WILLIAM HEITZMAN

Charles William Heitzman, M.D., died in the Baptist Hospital in Muskogee, Oklahoma. He had been in poor health for over a year.

Dr. Heitzman was born in Mississippi, May 31, 1870. He grew up in New Orleans, graduated at Tulane University in 1889. He did post-graduate work in the University of New York and later in Berlin. He practiced medicine in New Orleans for several years, later moving to Denver where he practiced his profession and was connected with the University of Denver. He practiced for a time in Kansas City, later moving to Muskogee where he spent the rest of his professional life.

RECENT DEATHS

(Insufficient Data for Obituaries.)

Dr. Oliver Bagby, Vinita, April 20, 1937.

Dr. John D. Leonard, Wagoner, April 23, 1937.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.
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A Modified Agnew's Operation for Syndactylism.
H. D. Cogswell, M.D., and H. M. Trusler, M.D.,
Indianapolis, Ind. Surgery, Gynecology and Ob-
stetrics, April, 1937, Page 792.

The authors point out that surgical textbooks advise Didot's operation for syndactylism. Anyone who has ever attempted this operation knows that it is inadequate. Agnew's modification uses a dorsal flap to make the web between the fingers. Further plastic work is necessary to cover the raw surface by a skin graft, for in this way a very fine result can be obtained.

The authors give a detailed description of the operation. They further point out that splinting should be carried out over a period of four weeks. Also they discuss the use of olive oil or cocoa butter on the grafts after the operation.

COMMENT: Every surgeon who has attempted the operation for web fingers or toes has met the problem of having an inadequate amount of skin to cover the raw surface after dividing the web.

The present method employed by most plastic surgeons is similar to the one described by Drs. Cogswell and Trusler.

The article is accompanied by photographs which are unusually clear in detail.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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On the Anatomy and Pathology of the Hip-Joint.
Poul Morville. *Acta Orthopaedica Scandinavica*,
VII, 107, 1936.

Flat acetabulum has been suggested as a cause of hip disorders by several writers and by Dr. Morville in a previous paper (*Acta Orthopaedica Scandinavica*, IV, 133, 1933). His present paper is based on the injection of the hips of twelve stillborn babies, and a study of the roentgenograms of one hundred patients with osteo-arthritis and of thirty patients who were admitted for hypertrophied prostates.

The femoral head is normally too large for the shallow socket at birth. The progressive deepening of the acetabulum, the changes of the axis of the neck, and the position of the epiphysis are shown diagrammatically from birth to nine years. Instead of the term "congenitally flat acetabulum," the writer suggests the phrase "acetabulum which remains flat."

He further groups hip lesions into constructive

(luxation, subluxation, and coxa valga) and structural (coxa plana, "slipping" epiphysis, and acquired subluxation.) Osteo-arthritis of the hip is developed on the basis of subluxation of the congenital or of the acquired type. Examples are given, and the treatment is discussed.

Correlation of Pathologic and Roentgenologic Findings in Tuberculosis and Pyogenic Infections of the Vertebrae. The Fate of the Intervertebral Disc. Edward L. Compere and Monroe Garrison. *Annals of Surgery*, CIV, 1038, December, 1936.

The vertebral body is richly supplied with nutrient arteries which penetrate the cortex, but do not cross the articular surfaces, while the intervertebral disc, on the other hand, has no blood supply in the adult, nutrition being supplied by the lymphatic system. The fibrocartilaginous annulus blends intimately with the hyaline-cartilage plates above and below, enclosing the nucleus pulposus, the semigelatinous substance of which is incompressible and its narrowing must therefore be obtained by dehydration, extrusion, or destruction.

Vertebral tuberculosis most commonly arises from a hematogenous implant in the spongiosa or compacta of the body, usually in the metaphysis with slow erosion into the cartilage. Such a lesion may be too small to be recognized in the roentgenogram until after the prolapse of the nucleus and destruction of the disc.

In pyogenic infection, the primary focus is in the bone, but the disc is less able to survive the attack, as demonstrated by early roentgenographic evidence. The cartilage plate is rapidly destroyed by the proteolytic enzymes, the nuclear substance is extruded, and the fibrous annulus also undergoes dissolution. The onset is rapid, the duration short, and the symptoms severe. When the infection subsides, there is regeneration of bone, and bony ankylosis occurs more often and more rapidly than in tuberculosis of the spine. Pyogenic infection may spread by direct extension through an intervertebral disc from body to body, but this was not found by the authors in their cases of vertebral tuberculosis. In the latter, spread by extension occurred under the anterior longitudinal ligaments with surface invasion of bone.

Secondary pyogenic infection is a frequent complication, characterized by sinus formation, amyloid disease, and death.

The pathological changes may be typical either of tuberculosis or of pyogenic osteomyelitis, or of a combination of the two.

Nine cases are reported, which are excellently illustrated with some forty-two photographic and roentgenographic studies of gross specimens and microscopic sections.

Brittle Bones and Blue Scleras in Five Generations.
Ralph G. Hills and Samuel McLanahan. *Archives of Internal Medicine*, LIX, 41, January, 1937.

The authors report the case of a white girl, aged ten years, who had multiple fractures, dislocation

of the hip, and blue sclera. Data were obtained concerning fifty members of the patient's family, in twenty-six of whom the main features of the disease were present. Four distinct features of this syndrome are emphasized; fragile bones, blue sclera, a tendency to deafness, and relaxation of the ligaments. Affected subjects tend to be short and slender. The etiology is unknown. The syndrome is best described as a hereditary hypoplasia of the mesenchyma and follows the mendelian law of inheritance, appearing as a dominant character. There is no specific treatment other than protection from injury and treatment of fractures which apparently heal satisfactorily. The fractures tend to occur throughout childhood until puberty is reached. The disease is to be distinguished from a large group of non-hereditary conditions of different etiologies, associated with soft or brittle bones—for example, osteoporosis, osteomalacia, metastases to bone, hyperparathyroidism.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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The Stereoscope in Theory and Practice. The British Journal of Ophthalmology, April, 1937. By Emanuel Krinsky, M.D., New York.

In a thirty-six page original article the author discusses his subject from many angles. Numerous charts, tables and drawings are included. It is an article that does not lend itself to abstracting. The author's concluding remarks will give some idea of the range of his discussion.

1. Stereoscopy, as ordinarily practiced, is a vague, undignified technique.
2. An appreciation of the underlying principles of stereoscopic optics is imperative in interpreting stereoscopic manipulations.
3. A fixed stereogram (with exception of a phoria card) is an unsatisfactory method of determining the fusion status or for orthoptic training.
4. The eyes cannot maintain the same inter-stereogram separation with change in viewing distance.
5. As the eyes converge with accommodation, the inter-stereogram separation must be made correspondingly less in order to maintain easy fusion.
6. A split stereogram which can be shifted to correspond to changing positions of visual axes with variable accommodations is the only practical method for stereoscopic study.
7. A stereogram with a separation fixed for infinity viewing range becomes relatively divergent when brought nearer to the eyes.
8. The variable convergences of the eyes with changing accommodations may be accurately calculated and applied to stereoscopic investigation.
9. A precision stereoscope enables the examiner to determine the convergence and divergence status in the primary phase both at infinity and at any desired accommodative range; thus enabling the examiner to diagnose and to classify the type and degree of muscle anomaly; the range of fusion; the amount of phoria; and the progress in terms of prismatic vergence with each sitting.
10. The ordinary professional stereoscope, be-

cause of its cramped construction and lenses of fixed focal length, considerably reduces its adaptability to excessive convergence and divergence. The stereoscope, however, may be so modified as to be adaptable to fairly large degrees of ocular convergence by the use of widely separated lenses of selective short focal lengths and supplemented, if necessary, by suitable prisms.

11. Accurate records can be kept with a calibrated stereoscope, and further supplemented with the patient's home-training record for purposes of intelligent co-operation.
12. The incorporation of fixed base-out prisms, as in the ordinary stereoscope is not, as ordinarily supposed, a means of adapting the instrument to greater convergences—but a relic of bygone days for employing larger stereograms (greater field of view) for purposes of parlour entertainment. The addition of selective prisms should be left to the examiner who alone should be in a position to determine the need for supplementing base-in or base-out prisms.
13. The author's stereoscope enables the examiner to determine at a glance the amount of convergence or divergence, with selective accommodations, for fusing split pictures, by incorporating:
 - (a) Viewing lenses of variable separation and of known focal length.
 - (b) Moving calibrated rod.
 - (c) Viewing boxes calibrated to record amount of separation of split pictures, and,
 - (d) Tables to which examiner may refer so as readily to translate these vergence readings.

The Medical Treatment of Meniere's Syndrome. Madelaine R. Brown, M.D., Boston. The Journal of the American Medical Association, April 3, 1937.

Meniere's original paper of 1861 is briefly reviewed. Lumbar puncture, quinine, mastoidectomy, labyrinthectomy and section of the vestibular portion of the eighth nerve have been used in combating this syndrome. Section of the nerve is the mode of procedure from which the most successful reports come at the present.

Furstenberg first noted the relation between dizziness, cardiovascular renal disease and water balance. Danish literature shows satisfactory treatment of Meniere's syndrome by dehydration combined with a low salt diet. It was determined that the excretion of the sodium was the important factor and that the addition of ammonium chloride to the diet aided in the elimination of the sodium. At Ann Arbor this was proven on fourteen patients. The increased intake of sodium precipitated an attack, while its withdrawal afforded complete relief. The Boston City Hospital and the Massachusetts General Hospital each placed six patients on this diet and found relief in periods from six months to twenty-two months. An increase of the sodium in four of them precipitated attacks.

He points out that failure of medical treatment may be due to a faulty diagnosis. The two symptoms most commonly lost are deafness and tinnitus, i. e., before an attack. He places them of equal importance as vertigo and vomiting. Not much importance is placed on Barany's test.

It is pointed out that the average sufferer from this syndrome is ready to follow any routine that

might prevent further attacks. Furstenberg's patients were mostly foreigners and some difficulty was had in getting the regime started. He hospitalized all of his fourteen patients for a period of thirty days.

The use of sodium bicarbonate for the vomiting is cautioned against as this increases the intake of sodium.

Brown reports in detail twelve cases of Meniere's syndrome that have been freed of their attacks by means of medical treatment.

Furstenberg's treatment and diet are given in such a form that they require no elaboration for anyone wishing to try them.

Diphtheria Simulating Peritonsillar Abscess. A. Harry Neffson, M.D., New York, and Jacob Brem, M.D., Boston. Archives of Otolaryngology, March, 1937.

Gordon and Young in 1930 reported forty-three cases where peritonsillar tissues had been incised in diphtheria. The mortality was fifty-eight per cent. Diphtheria of equal severity at the same time, where no incision was made, and the antitoxin was given, was thirty-four per cent. If an incision had been made in diphtheritic tissues and the antitoxin had been given immediately, the mortality was less than if given twenty-four hours later.

In the past ten years these cases reported above and a few from European literature are the only recorded cases.

Clinical diphtheria may be easily confused with peritonsillar abscess. Gordon and Young stated: "Patients with quinsy are usually adults, those with diphtheria children." The author's six cases reported show the fallacy of this. They were all adults, ages twenty-four to thirty-six. Even in Gordon's and Young's report thirty-one of their forty-three patients were fifteen years of age or over and twenty-five patients were twenty years or over in age.

If there is a suspected peritonsillar abscess the author's advise cultures before incision, as a twenty-four hour wait on the incision of the abscess is not ordinarily fatal. Repeated cultures should be done if necessary. Gordon and Young suggest antitoxin if you do not obtain pus on incision. At the Willard Parke Hospital in the past six or seven years there has been no instance of tonsillar diphtheria with peritonsillitis requiring incision. Mixed infections accompanying the diphtheritic infection is not uncommon.

Of the six cases reported, three died of toxic myocarditis and complications; two who survived showed toxic myocarditis and the remaining one showed no damage to the myocardium. They came to the hospital from the fifth to the eighth day in the course of the disease. Delay of giving the antitoxin and unnecessary surgery were causes of the high mortality (fifty per cent).

The author's differential diagnosis between peritonsillar edema of diphtheria and that of peritonsillar abscess are: "the low grade fever, the relatively rapid pulse, the absence of a history of a previous sore throat with high fever and chills, the gradual progress of the symptoms, the lack of local fluctuation and the greater general toxicity of the patient. Moreover, in diphtheria the peritonsillar edema is usually bilateral and there is diffuse adenocellulitis of the neck which is not tender, whereas with an abscess the edema is usually unilateral and there are discrete, tender tonsillar nodes. Also, in instances of abscess the throat is much more painful, opening the mouth is more

difficult and depressing the tongue with a stick causes excruciating pain owing to spasm of the muscles compressing the abscess."

Is Ionization Worth While for the Allergic Patient? Dr. Arthur M. Alden, St. Louis. The Laryngoscope, January, 1937.

Alden was one of the original enthusiasts on ionization by the Warwick method. His first report on this procedure was very favorable. After a continued use of the method for three years he publishes this article to evaluate his findings.

Warwick's technique was used at first; later any smooth galvanic current and two per cent zinc sulphate solution were found to produce the same result; it was found that when the zinc sulphate was put in tragacanth jelly and instilled in the nasal cavities with a syringe and cannula that the discomfort incident to the gauze packing was eliminated and the result obtained the same.

After a brief discussion of the physiology involved, Alden says: "The end result clinically is a nasal mucosa that is somewhat dryer than formerly and much less subject to intermittent attacks of intumescence." The sensitivity of the nasal cells to their particular allergens is decreased for a short period, i. e., months. The status of the individual as to his allergic condition is changed not at all.

The first nineteen patients he treated were in the height of their acute attacks and the result obtained was good, i. e., prompt and complete relief for the time being.

Let me quote Alden as to the evaluation of the clinical results: "My own estimation of the relief following ionization in hay fever and other allergic conditions, published in the spring of 1935 and based upon the results obtained during the season of 1934, and half of the 1933 season, was all wrong because not enough time had elapsed for the patients to resensitize themselves. At the present time resensitization has taken place in most of my hay fever patients and they still have their symptoms at the appointed time, though a number of them, due no doubt to the fibrotic changes in their submucosa, say that their nasal discomfort is much less severe than formerly."

His opinion is that desensitization is the method of choice. Where obstructive and secretory symptoms are the most prominent, then ionization is of value.

The ionization is not of value in asthma except for the relief of nasal obstruction when present.

Perennial allergic rhinitis symptoms in many cases show improvement.

The author's summary:

1. Ionization produces in the nasal mucosa a mechanical change which renders it less able to produce profound vascular or secretory responses to either external irritation or vaso-motor stimuli.
2. Ionization does not alter either the allergic status of the individual or the ability of the nasal cells to be affected by allergens.
3. The value of ionization as a therapeutic method in rhinology rests solely upon its efficiency as an agent to reduce excessive nasal intumescence and hypersecretion.

The Problem of Early Laryngeal Tuberculosis. Dr. N. Rh. Blegvad, Copenhagen. The Journal of Laryngology and Otology, March, 1937.

Hospitalized patients furnished data for the

author's conclusions. To the Oeresunds hospital in Copenhagen are admitted all patients suspected of tuberculosis and from these the Boserup Sanatorium is filled. These patients naturally furnish laryngeal tuberculosis in its various stages for observation and treatment. From 1916 to 1934, one thousand seven hundred seventy-three patients with laryngeal tuberculosis were treated at the hospital. Seventy-four per cent of these died; twenty-six per cent are alive (of the one thousand three hundred and sixty-nine patients that were under continual observation, four hundred and four cases could not be followed). Constant observation includes every fortnight at the clinic or if the laryngeal tuberculosis has healed, reporting from one to four times a year for inspection.

The treatment is used by the Finsen Institute, i. e., universal carbon-arc light baths. In the last few years the author has used quartz light baths. The carbon-arc light baths are more tiring than the quartz light treatment, so if the patient is feverish and in bad general condition the quartz light is preferable. Up to 1934, one hundred seventy-nine patients were treated with universal quartz light. The results were good showing forty-eight per cent cured or improved. The author draws no definite conclusion from this however as the number of patients treated is as yet too small.

Surgical procedures are done with the aid of a laryngeal mirror rather than by the direct method, the reasons being, less trauma to the patient and easier localization, because during direct laryngoscopy the larynx is drawn out of shape. From 1922 to 1936 the following surgery was done: four hundred one excisions; five hundred twenty-seven galvanocauterizations; forty amputations of the epiglottis; one hundred twenty-seven injections of alcohol; forty-nine resections of the superior laryngeal nerve.

Naturally in tubercular patients pathology of the larynx is usually tubercular. This does not however rule out the occurrence of other lesions such as benign neoplasms, acute catarrhal laryngitis, syphilitic mucous plaques and carcinoma, which the author describes and discusses. He does not stress the differential diagnosis of tuberculosis, cancer, or syphilis so much as he does an early diagnosis in laryngeal tuberculosis. The earlier the treatments are started the better the prognosis. He differs in opinion with other authors who think "that phthisical patients who are susceptible to acute laryngitis are especially disposed to laryngeal tuberculosis." This is quite contrary to his personal experience.

Suspicious symptoms of laryngeal tuberculosis mentioned in Sir St. Clair Thomson's textbook are: "catarrh or congestion, limited to one part of the larynx, and lasting some time. Thickness or congestion of one arytenoid, of one ary-epiglottic fold, or of one side of the epiglottis." All unsymmetrical affections. Also, "paresis of the muscles of adduction and tension."

Other suspicious changes described and discussed by the author are: isolated redness of a vocal cord; swelling and redness of the vocal processes; prolapse of the ventricle of Morgagni; swelling of the lower surface of the vocal cords; and swelling of the mucous membrane in the interarytenoid region.

Beautiful illustrations accompany the article.

Use of Sulfur Dioxide in Treatment of the Epidemic Cold. A. G. Rawlins, M.D., San Francisco. *Archives of Otolaryngology*, February, 1937.

The author assumes: (1) No definite organism

has been established as the initiating agent. (2) Visible bacteria are probably secondary invaders and are concerned only in the severity and prolongation of the disease and its complications. (3) There is considerable evidence that colds are due to an invisible, inculturable, filtrable agent of some kind and that it is present only in the early stages of the disease.

Environment, allergy and anatomic defects are predisposing factors but he considers the cold as an infectious epidemic and endemic disease due to a filtrable virus. He puts the incubation period at from one and one-half to three days; the immunity period from three to four months. The two epidemics of colds in San Francisco usually occur about the first of the year and in August or September.

The literature on colds does not show any research blood work in this connection. Thirty blood counts by the author on cases during the first twelve hours of the infection showed that they were generally within the normal limits. Three cases showed a mild eosinophilia; two cases a slight leukocytosis. There was no leukopenia as in the influenza. Temperature was checked in over one hundred cases during the first twelve hours and found to be slightly elevated.

The author's sulfur dioxide treatment was tried on over eighty patients recently; sixty-six reported a cure in the first or second day of treatment; fourteen reported no benefit. When tried on patients along in the third or fourth day of infection or in streptococcal throats, the results were negative.

The question of whether or not sulfur dioxide might be harmful was investigated in the following manner: one hundred men in a factory were exposed to sulfur dioxide fumes and another hundred were employed in a factory in work that did not necessitate contact with the fumes. It was found that no deleterious effect was evident from the fumes in endurable concentrations and even when stronger the effect was small under conditions which would allow quick escape.

The technic of the treatment: the patient is given a three ounce bottle half filled with a fresh saturated solution of sulfur dioxide, using a rubber stopper; the patient inhales the gas for about ten minutes three times daily; do not inhale deeply as this tends to produce a cough—shallow inhalations are all that are necessary; this is of benefit only in the early stages.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Acute and Chronic Pancreatitis. By Dr. Gatewood, Presbyterian Hospital, Chicago. *Surgical Clinics of North America*, April, 1937, Page 473.

The article, which is apparently a clinical lecture, is preceded by this quotation from Reginald Fitz in 1889: "Acute pancreatitis is to be suspected when a previously healthy person, or sufferer from occasional attacks of indigestion, is suddenly seized with violent pain in the epigastrium, followed by vomiting and collapse, and, in the course of twenty-four hours, by a circumscribed epigastric swelling, tympanitic or resistant, with a slight rise in temperature."

Discussing the etiology, the author says: "As the

exact etiology of acute pancreatitis is still unknown, so is the exact meaning of the term somewhat indefinite. It is used to cover the acute fulminant type which is accompanied by hemorrhage and necrosis as well as the interstitial variety, or the edematous type in which no necrosis occurs. There is also that rare variety in which suppuration predominates and in which either small multiple abscesses or one large abscess may occur."

Quoting McWhorter, who collected sixty-four cases that had been observed by members of the Chicago Surgical Society, it appears that the average age of the group was somewhat more than forty-three years. Men are more often affected than women. Vascular diseases, syphilis, disintegration of a neoplasm are to be considered in connection with the development of acute pancreatitis. Gall stones are found in about two-thirds of the cases.

Pathologically, the pancreas is soft, swollen, dark red, purplish or even black in color. Microscopically, there is necrosis which destroys the normal histology.

The author says that "the symptoms are so typical that the diagnosis should be made more often than it is." There is severe epigastric pain with nausea. There is collapse, with cyanosis. The pulse is rapid and thready. The conditions with which it is most often confused are cholelithiasis (acute), perforation of a peptic ulcer, and coronary thrombosis.

Laboratory investigators are, as a rule, of but little benefit, but the author calls attention to the Wohlgemuth test for blood sugar. While the normal blood sugar is from seventy to two hundred mg. to one hundred cc. of blood, in acute pancreatic inflammation there is great increase.

Discussing prognosis, attention is directed to the profound circulatory collapse that is present in the typical case. For this reason, "the prognosis varies greatly with the acuteness of the disease. Death may occur within twenty-four hours in spite of any form of treatment."

Usually, the treatment advised is surgical operation which may consist of drainage of the bile tract area, usually by way of the gall bladder; or as an alternative proceeding, the placing of drainage tubes or gauze packs down to the pancreas in the lesser peritoneal cavity. Incision of the capsule of the gland does not seem to be wise, because there is already necrosis.

While operative treatment is advised, the author remarks, "operative mortality may be reduced somewhat by more careful pre-operative preparation. Great care should be given to the treatment of shock, and a few hours spent in preparation may help lower the mortality."

In connection with chronic pancreatitis, the statement is made that it is found in at least one-fourth of patients who have disease of the bile tract area, the degree of pancreatitis varying. Stones are frequently found in the bile tract area.

The symptoms of chronic pancreatitis are very much like the symptoms of chronic cholecystitis. Where the pancreas encircles the common duct there is jaundice, usually without pain. While the jaundice may be very pronounced, it is usually possible to demonstrate a little bile in the feces.

Differentiation must be made between chronic pancreatitis, catarrhal jaundice, cirrhosis of the liver, sub-acute yellow atrophy of the liver, cholelithiasis, and carcinoma of the pancreas.

It is indicated that it is very difficult to make a differentiation between chronic pancreatitis and

carcinoma, even after the abdomen is opened, because the information secured by palpation is often distinctly suggestive of carcinoma.

In discussing treatment, the author makes the statement that "removal of gall stones and drainage of the gall bladder is the operation of choice in the unquestioned case of chronic pancreatitis." He objects to the indiscriminate anastomosis of the gall bladder with the stomach or duodenum because of the risk of ascending infection.

LeRoy Long.

Chondromatosis of the Joints. By Ernest Freund, Venice, Fla. Archives of Surgery, April, 1937, Page 670.

The author prefers to use the name "chondromatosis" rather than the name "osteochondromatosis" because "the lesion may be advanced and still there may be no new bone formation."

Chondromatosis of the joints is regarded as an uncommon affection, but it is indicated that the diagnosis is made erroneously many times.

The cases of three patients are reported as follows:

Case 1. A man, twenty-nine years of age, had limitation of motion in the left shoulder shortly after being thrown from a horse. After about a year there was some improvement, and he was able to work, but the limitation of motion remained, and there was occasional pain.

Physical examination showed the limitation of motion. There was slight atrophy of the left arm. A roentgenogram showed many small bodies, most of them not larger than a pea, in the inferior part of the shoulder joint. An open operation was performed, and many of the small bodies removed. However, a roentgenogram made shortly after the operation revealed a good many small bodies in the joint. There was great improvement. A roentgenogram about a year after the operation showed a still further reduction in the number of bodies, there being only one larger body in the inferior portion of the joint. The author believes that there had been spontaneous resorption of the joint bodies. Incidentally, there was considerable deformity of the head of the humerus.

Case 2. A man of twenty-five, while planting a garden, complained of pain and stiffness of the left hip. He said that as he stooped over he felt something pop in his left hip, and after that he could not "straighten out." He went down on his knees and spread the legs. This relieved the sharp pains. "From this time on, the left hip remained in an abducted position." Physical examination showed an abduction of forty degrees, and flexion of about thirty degrees. The pelvis was tilted upward on that side, and there was pronounced atrophy of the left thigh. Roentgenograms revealed bony atrophy about the hip joint. The space between the bones forming the joint seemed to be widened. A definite diagnosis was not made, but there was an exploration of the hip joint. The synovial fluid was thick, clear, yellow. There were a few small cartilaginous bodies in it. The patient developed a post-operative streptococcal infection. He was recovering when the article was written, but it was "doubtful how much useful motion he will preserve in the hip." The case of this patient was regarded as a case in which there was not sufficient calcification of the cartilaginous bodies to show in the roentgenogram.

Case 3. A man of fifty-two slipped on a greasy floor and fell two years before admission to the hospital. He was crippled in the left hip after that. When he was examined there were flexion and ab-

duction of the thigh. A roentgenogram four weeks after the onset of symptoms showed a calcified body in the left hip joint about the size of a bean. Another roentgenogram ten months after the onset showed several bodies. The joint space was preserved well. Two years after the onset a roentgenogram of the left hip joint revealed what appeared to be fusion of the pre-existing calcified bodies. An exploration of the hip joint was done. Six months after operation there was some improvement, but, judging from the report, not enough to be encouraging. Two years after the operation there were weakness and pain of the lower left extremity, and there were pronounced flexion and abduction of the thigh.

The author summarizes as follows: "On the basis of material in three cases, which has been carefully studied clinically, roentgenographically and pathologically, the idea is expressed that chondromatosis of joints does not represent a blastomatous change of the synovial membrane. The process is similar to that of myositis ossificans—a metaplastic hyperplasia of connective tissue. The close embryonal relation of synovia to cartilage explains the prevalence of cartilaginous tissue in chondromatosis. Spontaneous resorption of calcified bodies speaks in favor of a hyperplastic process also from a clinical point of view."

COMMENTS: It appears to the reporter that the chief value of the article is in connection with the histo-pathology. It appears that open operation is at least of doubtful value because there was apparent resorption of overlooked bodies in the first case reported, and in the two other cases the clinical results were apparently distinctly unsatisfactory.

LeRoy Long.

Ventrosuspension of the Uterus With Living Sutures. By E. M. Hodgkins, Boston, Massachusetts. *The American Journal of Obstetrics and Gynecology*, April, 1937, Page 559.

This author is reporting twenty-seven patients who have been operated upon and had the Olshausen type round ligament fixation done with fascial sutures as outlined in this article.

Operations were carried out through a transverse suprapubic incision and a strip of the lateral portion of the rectus fascia was detached at the upper margin of the exposed area and left attached at the lower incision point, being used on the corresponding side to incorporate the round ligament in a living suture fixation. The Olshausen type of operation was employed in all cases, but the author points out that the same principle could be utilized in any other modification of the original Gilliam procedure.

The author reports satisfactory results in all of the patients included in this series.

COMMENTS

The means of obtaining attached fascial suture material is not dissimilar to that employed in the McArthur type of inguinal hernia repair in which the fascial suture is derived from the aponeurosis of the external oblique.

The author undertook this change of procedure because of his constant large percentage of failures in maintaining position of the uterus after the use of linen suture material.

I have but rarely employed the Olshausen operation but in the Simpson modification of the Gilliam operation, chromic suture material has been perfectly satisfactory with practically no failures in maintaining the position of the uterus. Therefore, in the average round ligament suspension

operation the necessity for the employment of living sutures is quite questionable. However, there can be little doubt that the use of such living sutures will produce firm union and the knowledge of this technical variation is an addition to a surgeon's store of knowledge to cope with a situation in which it is suspected that there will be poor union between the round ligaments and either the fascia or peritoneum.

Wendell Long.

The Physiology of the Human Cervical Mucosa. By Anthony Wollner. *Surgery, Gynecology and Obstetrics*, April, 1937, Page 758.

Twenty women with normal menstrual histories, free from gross pathology of the genital organs, form the basis for this series. Fifty-four cervical biopsies were obtained from these twenty patients and this article is a report of the study of this biopsy material.

The author's conclusion follows:

"The present study permits one definite conclusion, and this is that there is a distinct menstrual cycle in the cervical mucosa. This structure being under hormonal influence like the endometrium, the intermenstrual phases must be taken into consideration when the histological findings in the cervix are interpreted. In the premenstrual phase the histological picture may simulate an inflammatory reaction, and cyst formations may result from hormone action by producing exfoliation of the epithelial lining."

Wendell Long.

A Clinical Study of Catgut in Relation to Abdominal Wound Disruption. By Hilger Perry Jenkins, Chicago, Illinois. *Surgery, Gynecology and Obstetrics*, March, 1937, Page 648.

The following quotation of the summary and conclusions contain the meat of this excellent and rather long report upon this important subject:

"1. A review of one thousand two hundred ninety-four cases of abdominal wound disruption has been made, including thirty-six cases from the University of Chicago Surgical Clinic. An analysis of the data on this large group has shown the following outstanding points:

"2. The average age was forty-four years.

"3. There were fifty-seven per cent males and forty-three per cent females.

"4. The primary disease necessitating operation was malignancy, twenty-five per cent; biliary tract disease, thirteen per cent; appendicitis, six per cent; gastric or duodenal ulcer, fifteen per cent; and gynecological conditions, eighteen per cent.

"5. The average time before disruption was 8.3 days.

"6. The mortality was thirty-five per cent.

"7. The factors influencing disruption have been discussed from the standpoints of the surgeons and his technique, of the patient, and of the suture material.

"8. Factors attributable to the surgeon included faulty knot tying, the use of non-pliable catgut, of too much catgut and of continuous catgut suture in the presence of drains or tension sutures.

"9. Factors attributable to the patient included delayed wound healing, undue strain of the healing wound from post-operative complications or conduct, and inherent weakness of the posterior sheath.

"10. Factors attributable to the suture material included mechanical damage to the catgut from instruments and soaking in very hot water, imper-

fections in the catgut, and rapid digestion as a result of sensitivity to catgut protein or chromic acid, and of infection.

"11. A clinical test for the duration of tensile strength of catgut has been described as the 'seton test' and the 'tension suture test.' When the test was conducted on clean wounds it was found that some brands of chromic catgut were digested in six to ten days, while other brands lasted fifteen to twenty days. The forty-day chromic usually lasted a few days longer than the twenty-day chromic of the same brand. Plain catgut of different brands lasted five to six days by the tension suture test, but it was found that when plain catgut was used for the seton test it usually became untied in the tissues and could be lifted out in two or three days. The presence of some bacterial contamination which contributed to the rapid digestion could not be excluded as a possible factor of importance, although no perceptible suppuration was observed about the catgut.

CONCLUSIONS

"As a result of the study of one thousand two hundred sixty-two cases of abdominal wound disruption it appears that a large number of factors may enter into the etiology of this condition. When absorbable suture material is used the rapidity of digestion of the approximating suture should be considered a factor of significance. In the light of observations made on the duration of tensile strength of chromic catgut under conditions obtaining in the 'seton test' and 'tension suture test' it appears that:

"1. Some brands of chromic catgut may be rapidly digested in the absence of perceptible suppuration, although the presence of some degree of low grade or non-suppurative infection cannot be excluded.

"2. The rapid digestion of twenty-day chromic catgut, which has been frequently observed in apparently clean disrupted wounds, can be attributed at least in some of the cases to the presence of a low grade non-suppurative infection.

"3. The use of a drain or tension suture in a wound closed with continuous chromic catgut is hazardous to the continuity of the suture.

"4. The difficulties which may have been blamed on the use of so-called twenty-day chromic catgut can be attributed to some extent to the way in which the surgeon used the catgut as well as to the use of a poorly resistant chromic catgut.

"5. There is a definite place in surgery for an absorbable suture material which can be depended upon to maintain its tensile strength under the conditions of the clinical tests described for at least fifteen to twenty days. The forty-day chromic catgut of two reliable manufacturers approaches these specifications more closely than the twenty-day chromic. It is hoped that two other companies will soon have a similar standard product.

"6. In using a catgut which will resist absorption under these circumstances for fifteen to twenty days, it must not be overlooked that under more favorable circumstances it might persist in the tissues for a much longer period of time and possibly result in extrusion of the undigested catgut in some instances. It is probable that this would be less likely to occur when smaller sizes of catgut are used.

"7. Irrespective of the disadvantages mentioned the use of a highly resistant forty-day chromic catgut with these specifications would seem to be appropriate in the presence of contamination or suppuration, and in patients who might be classed as having predilection for disruption."

COMMENTS

This is an extremely important subject not entirely limited to the field of wound disruption because the same care and the same procedures which will prevent wound disruption will unquestionably produce sounder healed wounds in the instances where there is no actual wound disruption.

While this article primarily deals with catgut in relation to abdominal wound disruption, there is much valuable information about the importance of such simple things as faulty knot tying, injury to catgut by instruments during operation and placing too much tension upon catgut sutures.

There is no doubt that catgut absorbs much more rapidly under certain tissue surroundings. For example, it has been known for some time that catgut absorbs more rapidly in vaginal wounds than in the abdominal wall. Smaller sizes of non-boilable forty-day chromic catgut are much to be preferred in suturing vesicovaginal defects for this reason.

Wendell Long.

Clinical Classification of Cases of Carcinoma of Corpus Uteri. By H. S. Crossen, St. Louis, Mo. *The American Journal of Obstetrics and Gynecology*, April, 1937, Page 587.

"A uniform method of clinical classification according to extent of involvement is imperative, not only for evaluation of treatment results in reported cases, but also as a guide to the selection of the best treatment for patients as they come day by day."

"Each of these stages was selected with two points in view: first, to have its limits correspond with anatomic lines as far as practicable so as to be well defined and easily described, and, second, to have it recognizable clinically before operation as far as possible with the various helps available. The six stages, each representing a definite extent of involvement, are as follows:

"Stage I: Endometrium alone involved.

"Stage II: Definite involvement of the muscular wall, but not beyond its middle.

"Stage III: Extension to the outer half of the uterine wall, but not beyond the borders of the uterus. This includes extension to the peritoneal coat with possible areas of adhesive peritonitis, but without carcinomatous involvement of the adhesions.

"Stage IV: Extension to surrounding structures but not beyond removable ones, such as adnexa and adjacent portions of the broad ligaments. There may or may not be extensive intestinal or other peritoneal adhesions, but no extension of carcinoma cells into such adhesions.

"Stage V: Extension into structures not advisable to remove, but removal of the original tumor is still practicable. The carcinomatous extension may be into an adherent coil of intestine or an adherent area of bladder wall, or it may be along the broad ligament lymphatics into the deep structures of the pelvic wall.

"Stage VI: There is such extensive involvement of surrounding structures that not even the main tumor mass can be safely removed."

There follows an excellent brief discussion of the clinical recognition of the stages and a summary of the treatment of each.

COMMENTS

As Dr. Crossen states in the introduction to this article, a dependable clinical classification of cases of carcinoma of the corpus has been delayed by

difficulties not encountered in carcinoma of the cervix. "In cervix cancer the location and extent of the infiltration can be determined by direct palpation, and the depth of the vaginal and cervical ulcerations are open to easy and accurate inspection. Not so in corpus cancer, where the various stages of extension into the thick uterine wall defy palpation and inspection, and can be outlined only after the uterus is removed."

The clinical classification here given impresses one as being quite definite and practical. It more nearly approaches a classification which would be universally adaptable than any other which has been presented. Because of the need for a common basis upon which treatment can be evaluated, it is hoped that it will be rather universally adapted.

Wendell Long.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

By HUGH JETER, M.D., F.A.C.P., A.S.C.P.

Duration of Immunity Following Diphtheria Prophylaxis. By F. G. Jones, Indianapolis, Ind. *The Journal of Laboratory and Clinical Medicine*. Vol. 22, No. 6, March, 1937.

Jones reports the results of Schick testing three hundred and forty-four children between seven and twenty years of age who had been in previous years immunized to diphtheria, or had been found immune as follows:

Found Schick positive and rendered Schick negative—

By toxin anti-toxin eight years ago; now positive	5%
By toxoid six years ago; now positive.....	14.3%
By toxoid five years ago; now positive.....	7.1%
By toxoid four years ago; now positive.....	6.7%
By alum precipitated toxoid two years ago; now positive	0%
By alum precipitated toxoid sixteen months ago; now positive.....	3.2%

Of those found Schick negative eight years ago, with no history of immunization, twenty-three per cent are now positive. No similar reversion has occurred in any subsequent group.

Eleven per cent of the whole group gave pseudo-reactions, of which twenty-seven per cent were also Schick positive. No pseudo-reaction occurred under thirteen years of age. His data agrees with those of other workers, indicating that alum precipitated toxoid is a better immunizing agent than toxoid; and toxoid in turn is better than toxin-antitoxin mixture and that this immunity is just as lasting after alum precipitated toxoid.

Oil Aspiration Pneumonia: Report of Two Autopsied Cases in Adults. By George H. Fetterman, M.D., Mayview, Pa. *The Journal of Laboratory and Clinical Medicine*. Vol. 22, No. 6, March, 1937.

Fetterman reports two fatal cases of oil aspiration pneumonia in adults. Both patients had difficulty in swallowing. In one the aspiration occurred with the administration of two one-half ounce doses of mineral oil, in the other, following repeated one ounce doses. At autopsy all of the stages of pulmonary reactivity to oil were encountered in one or the other of the cases, ranging from intra-alveolar phagocytosis of fine oil droplets early in

the process, to the formation of densely fibrous foreign body granulomas about large oil droplets late in the disease.

Although oil aspiration pneumonia is not always fatal, care should be taken in the administration of oil containing substances to infants and adults as well.

COMMENT

Autopsy experiences and to some extent clinical observations have led me to the belief that aspiration pneumonia deserves considerably more serious thought and attention than received. Evidences of material having been aspirated and along with it patches of pneumonia in keeping so far as the location and other histological evidences are concerned, with results which might be expected from the aspiration of infected foreign material, is not an uncommon finding in connection with the study of autopsy material. It is doubtless true that most cases a few hours or longer before death go through a state wherein the normal cough reflexes and other natural protective reactions such as change in position, general resistancy, etc., are reduced to a minimum. However, it seems to me not unlikely that during certain stages of disease when aspiration pneumonia occurs preagonal states or possibly undue sedation that a patient may succumb to the effects of the pneumonia and would perhaps otherwise have been able to carry the necessary load and survive.

Clinical and Experimental: The Effect of Blood Pressor Episodes on Basophilic Aggregation Counts. By G. Howard Gowen, M.D., Springfield, Ill. *The Journal of Laboratory and Clinical Medicine*. Vol. 22, No. 6, March, 1937.

Gowen has previously shown that in normal individuals the basophilic aggregation reticulocyte count varies with daily meteorologic alterations, increasing during periods of low temperature and high barometric pressure. The maximum variation is seven hundred fifty to ten thousand basophilic aggregations per million red blood cells.

He now shows a similar correlation in an arteriosclerotic male patient and in two experimental rabbits. Furthermore, following intravenous pitressin injections the rabbits repeatedly showed both an increase in the average basophilic aggregation counts and an increase in the fluctuations concomitant with the meteorologic changes. These results are in accordance with the assumption that the peaks normally occur as a result of bone marrow stimulation due to anoxia. Other workers have found that experimental reduction of barometric pressure results in reticulocytosis in rats, and that pitressin injections result after five days in a reticulocytosis as high as fifty per cent.

By C. E. BRADLEY, M.D.

Tremors of the Newborn (Birth Shock), Tetany and Nervous Disturbances in Children—Clinical Observations and Treatment. Harry B. Litchfield, M.D., Brooklyn, New York. *American Journal of Diseases of Children*, Vol. 52, No. 6, December, 1936, Pages 1312-18.

The author discusses the beginning symptoms of tetany and their general care and treatment, and then discusses two series of cases; the first, of new born children, manifesting tremor, irritability, and low blood calcium levels, together with a control group; the second consisting of older children manifesting nervous disturbances and tetany.

A new drug, a double salt of calcium lactobionate and calcium bromide, which is easily soluble in

water, pleasant to taste when administered in the form of granules containing forty per cent of the salt mixed with sugar, and which is non-irritating to the gastro-intestinal tract even in children whose symptoms included vomiting, was given to both groups of children.

The first series of infants were given an ordinary formula, with two one-half teaspoon doses of the new drug daily, beginning forty-eight hours after birth. They showed marked improvement with a rise in the calcium level and disappearance of the nervous symptoms in from four to ten days. The control group of infants were given the same formula, without the drug for ten days. They continued to have low calcium levels and the nervous symptoms remained the same or became worse and usually they lost weight and became dehydrated. On the tenth day, the new drug was added to their formulas and they began to make marked and rapid improvement.

The children in the older series were three years, five years and thirteen months old, respectively. All had had nervous symptoms since birth. The first two were given one tablespoon of the drug twice daily and the third received it three times daily. They showed marked improvement after administration of the drug, and in one case where it was discontinued for a short time, the symptoms recurred, until the drug was again administered.

Pneumococcic Pneumonia in Infants and Children.

Jessie G. M. Bullova, M.D., and Evelyn Greenbaum, New York. *American Journal Diseases of Children*, Vol. 53, No. 1, January, 1937, Pages 22-31.

A study of 538 cases of pneumococcic pneumonia in infants and children in relation to the incidence and mortality of the thirty-two types which have been classified to date is reported.

The type of pneumococcus was determined by the culture of (1) material from the throat, (2) blood or, (3) material obtained by means of transthoracic lung section. In the first group the throat was swabbed, some of the mucus or sputum obtained, then the swab was placed in blood broth, incubated four hours, and the type identified by Sabin's mouse inoculation and agglutination method. In the second group, three cc. of blood were collected and divided for use in duplicate plates and culture in broth which supported a good growth of pneumococci. In the third instance, the material obtained by lung puncture was cultured in broth, and the type identified by either the Neufeld or Sabin technic.

The most frequently observed type of pneumococcus was XIV; it was found in approximately 15.4 per cent of the five hundred thirty-nine cases. Type I occurred in almost fifteen per cent of the cases. Type VI (type XXVI is now called VI-B and is included with the type VI) occurred in 10.2 per cent of the cases. Types IV, V, III, XIX, and VII, named in the order of their incidence, were seen in more than three per cent of the cases and in approximately thirteen per cent of the cases the "X" or unclassified type was observed.

Seventeen and nine-tenths per cent of the two hundred sixty-two cases in infants under two years of age were produced by type XIV; thirteen per cent by type VI; 7.3 per cent by XIX; and only five per cent by type I; in thirty-nine cases the organism was unclassified, and there were seven instances of multiple invasion.

In the two hundred seventy-seven cases in which the children were over two years of age, type I was the cause of almost twenty-four per cent; thirteen

per cent was due to type XIV; almost eight per cent to type V; seven per cent to type VI; six per cent to type IV; and over three per cent to type VII. Types II, VIII and XIX were each observed in six cases, and there were eight cases of multiple invasion.

The mortality rate in relation to the number of cases observed was given, and it was noted that often the cases produced by the unusual types terminated fatally, although this was not always the case. The high death rate for the infrequently encountered types XVI, XVII and XXIII is noteworthy. In the cases due to type XVI, two out of the seven terminated fatally; in those due to type XVII, one out of three, and to type XXIII, four out of nine.

Although the mortality rate varies greatly with the age of the patient, the type of the organism, and the type of the pneumonia, it was evident that the death rate was usually higher for the same type in infants under two years of age than in those over two. Pneumococcic pneumonia is fatal three times as often in children under two years as it is in those older. At all ages bronchopneumonia is fatal more than twice as often as lobar pneumonia.

It is not safe to infer that the organism obtained from the lungs during the infection was necessarily responsible for the subsequent or concurrent associated conditions in the chest or meninges.

The Use of Benzedrine Inhaler in Children

Scarano and Coppolino (*Arch. Pediat.*, 54, 97, Feb., 1937) report on the use of Benzedrine (benzyl methyl carbinamine, S.K.F.) in vapor phase in one hundred cases of nasal congestion in children. The ages of the group ranged between two months and twelve years, with eleven under one year of age.

In ninety-seven per cent, or all but three cases, Benzedrine vapor diminished engorgement, established ventilation and relieved congestion promptly and effectively. With nursing infants this form of therapy was particularly effective.

Discomfort following administration was mild and infrequent and in no instance severe enough to cause discontinuance of treatment. No systemic reactions such as restlessness or sleeplessness were observed; nor did continued use produce tolerance, atony or bogginess.

The authors conclude that Benzedrine Inhaler therapy is effective and acceptable to the child patient. At the same time it tends to eliminate the pain and discomfort which so often complicate the administration of liquid vasoconstrictors.

Auricular Fibrillation: Its Influence on Course of Hypertensive Heart Disease

Auricular fibrillation, the most common form of arrhythmia in hypertensive heart disease, occurred in one hundred fifty-eight (25.3 per cent) of six hundred twenty-three patients with hypertension analyzed by Nathan Flaxman, Chicago (*Journal A. M. A.*, March 6, 1937). It definitely influenced the course of the disease in forty-four patients (27.8 per cent) in whom the rapid irregularity preceded and precipitated the congestive heart failure and led to an early death from this cause within one month after the onset in eight (18.1 per cent) of the forty-four patients. When the auricular fibrillation occurred after congestive heart failure had been present from one month to several years, it had no apparent influence on the course of the disease except in relation to the cause of death and the comparative absence of additional occurrences common to appear in hypertensive patients.

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The Incidence of Syphilis Complicating Pregnancy*

L. G. NEAL, M.D.
PONCA CITY

I am sure with the introduction of this question as a topic of a paper, a great many will feel that I, in company with a number of men who like to take to the easy green pastures of prenatal discussion, have done so again.

In writing a paper for an occasion like this, however, I hope to treat as lightly as is possible all the prenatal field as a field, and I would like to bring to you a message that is highly important. It would seem to me at the outset that one of the initial steps in the conduct of an obstetrical case would be to establish the following facts: evidence of pregnancy, ability of the expectant to deliver a child, and third that the patient is free of diseases that concurrently might complicate her expectancy. That is to say, such things as tuberculosis, diabetes, mal-formation and syphilis. It is not a difficult thing to establish the positive or negative Wasserman of a case, especially in a state where the laboratory facilities are available as they are available in Oklahoma; where the laity has become so familiar with syphilis as a disease entity and with the terrific ravages that follow syphilitic involvement. Ultimately that there is such a subject as congenital syphilis admittedly discussed and read about and all too frequently seen, it becomes manifestly an indictment against the indifference and laxity of the so-

called obstetrician. So this is not a treatise of the prenatal field *per se* but a singling out of one of the more important fields of medical activity that the isolation of the causative factor of syphilis something like a quarter of a century ago has made possible to the betterment of mankind and to the elevation of that division of medicine called obstetrics.

It will be my purpose, first, to discuss the findings of the *American Social Hygiene Association* on syphilis in pregnancy which resulted from a set of questions sent to the leading clinics that have to do with obstetrics in this country. I will not attempt a report in full, but will brief some of their findings. Again this paper will make no attempt to deal with the treatment of lues, when and if found, but will reflect the general laxity of highly reputable clinics of obstetrics.

While the congenital form of syphilis presents the most tragic and destructive aspect of the disease and the one most resistant to treatment, it is now well known that it is in many ways the most easily preventable. An abundance of experience has shown that if the syphilitic pregnant woman can be brought under modern treatment early in pregnancy and treatment continued through pregnancy, the transmission of the disease to the child can be prevented in almost all cases; that in women brought under treatment by the middle of pregnancy about ninety-five per

*Read before the Section on Obstetrics and Pediatrics, Oklahoma State Medical Association, Annual Meeting, Tulsa, May 12, 1937.

cent of the offspring will be protected, and that even treatment begun any time after the middle of pregnancy still serves to protect a surprising proportion of children from infection before birth. The fact that, by timely treatment of the syphilitic pregnant woman, one can with reasonable certainty assure the birth of healthy children from mothers still syphilitic is surely one of the most striking achievements of preventive medicine. If the means of prevention in the physician's hands could be generally applied, congenital syphilis could be quickly eradicated.

The crux of the matter lies in early diagnosis and treatment. Clinical evidence alone is extremely unreliable, since during most of the course of syphilis no clinical evidence of its presence appears, and this is particularly true in pregnancy because pregnancy itself tends to repress clinical manifestations. A very large measure of reliance for diagnosis, however, may be placed in serologic tests. While it is true that in a small proportion of cases in which the blood test is negative the mother may infect the child, repeated blood tests, made on suspicion of the disease, will reveal most of these cases also.

The virtual eradication of congenital syphilis becomes possible by making a blood test early on every pregnant woman and bringing the positive cases under early treatment. As a measure of progress toward this desired end the question becomes important as to how generally the blood test has been adopted as a routine procedure in obstetric practice.

For several years fairly reliable and impressive data have been available as to the prevalence of syphilis among women who attend public clinics but almost no data as to its occurrence among women in private obstetric practice. The *American Social Hygiene Association* undertook to secure data as to the use of blood tests for syphilis and subsequent treatment both among antepartum clinics and in the private practice of obstetricians.

SEROLOGIC TESTS IN ANTEPARTUM CLINICS

A questionnaire was sent to representative antepartum clinics in all parts of the United States. Replies giving data requested were received from two hundred

sixty-eight clinics. The questions and a digest of the replies to them are presented herewith:

Question 1. How many antepartum cases were registered for care in your clinic in 1934?

The clinics were requested so far as possible to make report for a period of three or four years; hence some reports for one year only, others for two to four years. The total number of antepartum cases included in the study was 219,659.

Question 2. Do you make a blood test for syphilis as a routine in all antepartum cases? If not, what is your practice in the matter?

Of the two hundred sixty-eight clinics, two hundred fifty (ninety-three per cent) report making blood tests as a routine procedure, and eighteen clinics not as a routine but only on "indication." This presents a very encouraging outlook so far as antepartum clinics are concerned. Rapid progress has been made in very recent years in the adoption of the practice of making blood tests as a routine. A large number of clinics report having begun this practice within the past two years. The progress made in this matter is suggested by comparison with a study of antepartum clinics made in 1925 by a committee of the *Medical Women's National Association* in cooperation with the *American Social Hygiene Association*, in which only forty-two per cent of thirty-seven clinics scattered throughout the United States reported making blood tests for syphilis as a routine, as compared to ninety-three per cent in the present study. It can be said that no antepartum clinic can any longer be looked on as being in line with modern ideas and practice which fails to make blood tests as a routine on all pregnant women who attend.

Question 3. In your antepartum clinic, what proportion of cases have been found syphilitic, (a) white, (b) Negro?

A report for a number of years would be appreciated. Unfortunately a large proportion of the clinics failed to indicate whether the report was for white or Negro patients or both. A surprisingly large number stated that no distinction as to race is made in their records.

Seventy-four of the clinics indicate that they report for white patients only. These embrace a total of 62,516 patients. Of these 3,783 were found positive, this being about six per cent.

Only eleven clinics indicate they are reporting for Negro patients only. These include a total of one thousand seven hundred eight cases, of which three hundred eight, or eighteen per cent, are reported positive. This means that among Negro cases in this group, three times as many were found syphilitic as among the white patients.

Fifty-nine clinics state that they are reporting for both white and Negro patients but do not give the respective numbers. These embrace a total of 44,855 cases. Of these, 2460, or 5.5 per cent, were found positive. This comparatively low rate is doubtlessly accounted for by the fact that in some of these clinics only a very small proportion of Negro cases are included; hence the positive percentage approaches so nearly that of the white group reported.

Sixty-four of the clinics report the respective percentages of white and Negro positive cases without giving the numbers from which the percentages are derived. This enables us to make the sample comparisons of syphilis rates among white and Negro patients given in Table 1. I will not attempt to give the full table designated No. 1, but of twenty-two clinics giving a return specific in racial division the white gave an index of 2.42 per cent and the colored race 10.5 per cent.

In only two per cent of clinics is the white syphilis rate over twelve per cent, whereas for Negroes the syphilis rate is more than twelve per cent in forty-eight per cent of the clinics. In eighty-nine per cent of the clinics the syphilis rate for white patients is not over five per cent.

Question 4. If possible, please report what proportion of women came to the clinic before the middle of pregnancy, and how many after.

One hundred and forty-two clinics report on the question. The results show less than twenty per cent, eleven clinics; from twenty to twenty-nine per cent, sixteen clinics; from thirty to thirty-nine per cent, twenty-nine clinics; from forty to

forty-nine per cent, twenty-four clinics; from fifty to fifty-nine per cent, thirty clinics; from sixty to sixty-nine per cent, fifteen clinics.

This question is important in view of the urgency that syphilitic pregnant women come under treatment not later than the middle of the period of pregnancy. It is encouraging to note that, of the one-hundred forty-two clinics reporting on this question, sixty-two, or forty-four per cent, are able to report that fifty per cent or more of the patients register by the middle of pregnancy. At the same time it shows how far we still are from our ultimate goal in this matter. It calls for more and more persistent education of the general public, especially the women, to secure their needed cooperation in this aspect of public health.

Question No. 5 has to do with treatment of the luetic cases found and will be of no interest to us here except I would venture the opinion that very close cooperation between the obstetrician and the treatment should obtain and probably the end result would justify the treatment being conducted in the obstetrical clinic.

Question No. 6. If you can give data as to the percentage of cases in which treatment of the woman proved protective for the child, based on a given period of observation and serologic tests, it will be of great value.

The questionnaire returns as a whole, and the answers to this last question in particular, reveal an astonishing lack of system and thoroughness in the recording of data and in studying and analyzing the results of treatment. In a large proportion of the clinics no racial distinction in the records is made, no records of the percentage of cases positive for syphilis, no accurate data as to the period of pregnancy in which patients come to the clinic and none as to when treatment was begun, and no record of results of treatment in terms of follow up of the children born.

In the matter of following cases with observation and serologic tests for a reasonable period particularly, this study shows urgent need of improvement. For the most part one might assume from the answers to this question that no concern

for the child is manifested beyond birth or a few weeks after birth. Of the two hundred sixty-eight clinics, only twenty-one hazard any answer to the question at all and many of these obviously are only guesses. Only three clinics indicate results based on a stated plan and period of follow up of infants. The answers of the twenty-one clinics to this question were as follows in part only.

1. Ninety-nine per cent protected for six months.
2. Negative Wassermann reactions in ninety-five per cent.
3. All negative babies.
4. In fully treated cases one hundred per cent are protected. We follow up every three months. Based on results of a year's survey in 1930, cases being considered "treated" if the mother had had any antisyphilitic treatment at all no matter how inadequate, we have the following results: Good (normal baby at two weeks) treated, eighty-eight per cent; untreated, forty-eight per cent. Bad (premature, stillbirth, neonatal death, stigmas): treated, twelve per cent; untreated, fifty-two per cent.
5. Twenty-one cases followed with blood tests for eleven months. Twenty-five out of twenty-six negative and completely healthy.
6. Treatment begun up to three months, ninety-five per cent protected. Treatment begun from three to six months, seventy per cent protected. Treatment begun from six to nine months, forty per cent protected.
7. One hundred per cent in those treated early.
8. One hundred per cent in first half of pregnancy.
9. One hundred per cent before five months.
10. Ninety-five per cent of those treated before six months.

On the whole this study indicates encouraging progress toward the prevention of congenital syphilis through the routine use of the serologic test of pregnant women. It emphasizes the need of more

persistent effort to secure early diagnosis and early treatment. It indicates also the urgent need of more adequate record keeping and particularly of longer and more thorough follow up of children born of syphilitic women, and scientific analysis of the results of treatment in the light of extended observation and tests.

And now I would like to discuss briefly the status of the private patient with regards to the incident of lues in obstetrics. Since there is small opportunity to evaluate percentages of lues in private practice except by following further this report of the *American Social Hygiene Association*, I will brief some of their findings in the field of private practice.

Two hundred fifty private physicians—members of the *American Association of Obstetricians* or of the *New England Obstetrical and Gynecological Society*, give results briefly as follows—and I am sure you will agree that they should be more than representative of good obstetrics in this country:

Question No. 1. Do you now or have you ever for a considerable period made blood tests for syphilis as a routine on all pregnant women in your care as private cases?

Forty-two, or fifty-one per cent, answered "Yes." Forty, or forty-nine per cent, answered "No."

This is a much more favorable showing than our general impressions had led us to anticipate. It is encouraging not only in that at this time more than half of the physicians reporting are making the use of the blood test a routine practice but also in that the practice in most cases has been adhered to for a considerable period of years, ranging from one to seventeen years, the average being eight and one-half years.

Question No. 2. If so, what percentage of positive diagnoses has been made?

The thirty-seven replies to this question range from 0.0 to 3.5 per cent (Table 3).

Three additional physicians reply respectively "one case," "one in sixteen cases," and "one this year."

It is seen that in one group of seventeen physicians the positive cases range from

0.0 to 0.6 per cent, and among another group of twenty physicians, more than half of the total, the positive cases range from one to 3.5 per cent. Surely this reported range of the prevalence of syphilis in private obstetric practice abundantly justifies and suggests the urgency of the routine use of the serologic test. This receives support from the fact that for the most part of the physicians who report the low percentage of positives are just as emphatic as to the importance of the routine test as are those who report the higher percentage. One physician has made the blood test as a routine procedure for twelve years, although in nine years and one hundred ninety-seven cases he has had no positives. Another physician has made the blood test as a routine since 1925, although in the four hundred fifty cases cared for he has had no positives. One physician has made the blood test as a routine for five years, although in one thousand cases he has had only one positive. This is in line with a statement by Moore of Johns Hopkins, granting that in private practice one may have to make two hundred tests to get one positive, but insisting that if the rate were one in one thousand it would be abundantly worth while. One physician has made the test as a routine for fifteen years, during which in 4,955 cases he has had 0.6 per cent positive.

Question No. 3. Do you consider it generally feasible to make blood tests as a routine in private obstetric practice. If not, why not?

Fifty-five physicians answered "Yes;" twenty-six answered "No;" six made a qualifying comment. It is significant that the great majority of these obstetricians regard the routine blood test in private practice as feasible, including sixteen physicians who are not as yet doing so.

The following are samples of replies made to the feasibility of routine Wasserman in private practice.

1. "Yes, not only feasible but imperative."
2. "Absolutely, yes."
3. "Yes, if the health department will make tests without charge and patients are educated as to the value of prenatal care."

4. "Yes, the patients rather welcome the report. Only one has objected in one thousand cases."
5. "Yes, there is no objection on the part of my patients."
6. "Yes, there is as a rule very little objection."
7. "Yes, and I should say of great value, and there is very little trouble or expense attached to the examinations, as the health department does the work."
8. "Yes, absolutely. No explanation is made except that I wish to take some blood for examination."
9. "Yes, not only feasible but patients expect and often demand it." Which experience I have also had several times.

The following are samples of negative replies made:

1. "No, because of lack of laboratory facilities and extra cost to patients." (Pittsburgh.)
2. "No, because of lack of proper education on this point, less than fifty per cent of private patients will submit to a Wasserman test."
3. "No, because intelligent people of this type do not marry if conscious of an infection." (Comment: Half the people who have syphilis do not know they have it.)
4. "No, because of type of patients under my care and low incidence of syphilis in the community."
5. "No, because of expense."
6. "No, patients object to added expense."
7. "No, the patients will object and feel that suspicion is being cast upon their character."

It seems obvious that the frequently recurring objections on the ground of added expense have little or no sound basis, as free serologic service by the city or state health departments is available in almost all cities and states.

It seems too that hesitancy to make the blood test on the ground that patients will object is based on fearful surmise rather than on actual experience with the practice. In this study not a single instance is

stated in which a physician undertook to make blood tests as a routine and was obliged to give it up because the patients objected. As is indicated by some of the doctors, blood examinations are made for a variety of purposes and the exact reason for taking blood is not always, and need not be, made known to the patient.

Question No. 4. If it is possible to give the number of cases involved in your data, it will be helpful.

Twenty-four of the doctors report the number of patients involved in their report. The numbers range from fifty to 4,955. The average number per physician is 1,271. The numbers are sufficiently large to render the reports distinctly significant.

This study seems to show an encouraging trend with reference to the role of the private physician in the prevention of congenital syphilis. It is to be noted, however, that considerable reluctance to employ the routine use of the blood test on pregnant women still exists among private practitioners. In view of the strategic position of the private physician in this aspect

of syphilis control, it is to be hoped that the practice and experience of the majority of the physicians here reporting will encourage many more hesitating ones to adopt the rule "a blood test early for every pregnant woman."

And now in conclusion I would like to say that many of you will have already thought that Shakespeare was probably correct in his titled play "Much Ado About Nothing." In other words I might in a much quicker way have said a "Wasserman for every pregnant woman," and have done with it. I dare say many of us will return to our practice and continue to do Wassermans when indicated and a great many children will continue to be delivered to face life with an overwhelming handicap. The great imitator, syphilis, has never been easy to detect. Many of its usual signs are recessive during pregnancy and since the best curative results are in the early months of pregnancy, let us lend ourselves to the purpose of early diagnosis and treatment, and in so doing bring about a lessening in the amazing high incidence of syphilis complications in pregnancy.

Some Observations on the Serological Diagnosis of Syphilis*

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Since there has been so much discussion of late on the subject of syphilis both in the lay and medical press, I think it would be in order to consider some clinical observations on the serological diagnosis of this disease. The subject is one of great importance because of the widespread distribution of this infection; and the many difficulties which beset its diagnosis are brought to mind when we consider its chronic and concealed stages, as well as the acute, treated and atypical cases. A review of the literature on this subject is most interesting but its volume is pro-

hibitive of the undertaking. The complement-fixation reaction in syphilis was discovered in 1906 by Wassermann, Neisser and Bruch and since that time has undergone many changes both in the theory of its action and in its technical details. Since this paper has to do with clinical observations, I shall not attempt to discuss the technical mechanisms of the tests but will consider it only in its relation to diagnosis. The success of this method of diagnosis is dependent upon the interaction of the causative organism and the host, hence it would seem logical to review briefly the basic pathology of the disease.

When the spirochete enters the body

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what happens? A full answer is yet speculative. It is known, however, that the disease becomes systemic almost immediately; the chancre appears, the spirochetes flourish in this localized haven and the local Wassermann reaction becomes positive early, to be followed soon by the positive reaction of the blood. The chancre begins spontaneously to heal, due presumably to the localized hyper-activity of the disease process or a localized increase in the mechanism of immunity. This soon is followed by the florid secondaries which exemplify the height of syphilitic activity. In a short time these fade and the long latent phase of the infection is soon to begin. The possibility of serological diagnosis is present from the early part of this disease process on through.

The complement-fixation reaction in syphilis is not a biologically specific reaction since the "reagin" or so-called Wassermann substance occurring in the serum and spinal fluid of syphilitics is capable of flocculating the lipoids of any normal tissue. Practically, however, this reaction is specific for syphilis in those places where frambesia, yaws or trypanosomiasis are rare or unknown. It may be assumed then since these diseases are rare or never seen in this country that it is possible to render this test specific. There have been many extravagant claims and much untruth put forth under the guise of the "Wassermann reaction" but, in spite of all this, there must be something of real value in the Wassermann reaction and the serological diagnosis of syphilis for it to have withstood the test of thirty-one years of time and today remain the most valuable laboratory aid known to medicine. One of the earliest questions to face the clinician in this respect was whether there were other diseases than syphilis and yaws that were capable of producing a true biologically positive Wassermann. Many leading writers are of the opinion that this is possible and frequently occurs. Some of the diseases named are: leprosy, tuberculosis, acute exanthemata, pneumonia, relapsing fever, pernicious anemia, malaria, pregnancy and the systemic mycotic infections. It has been my observation that this is a very much over-emphasized phase of the problem and I feel that with the exception of the diseases named that have a close

biological relationship to the organism of this disease, the positive reactions are due either to syphilis or to technical error. It is to be remembered that syphilis is a concealed and latent disease and in any study of the specificity of the Wassermann and other serum tests for syphilis where the disease is not clinically manifest some truly positive reactions are to be expected. Then before any non-syphilitic disease can be considered to yield a positive reaction the incidence must be above the average level of syphilis as determined by an adequate number of controls taken from the same social group. Much data is to be had as to numbers and percentages of positive reactions in this respect but their wide variation only condemns their accuracy. This phase of the subject is of prime importance and I think it is a safe clinical rule to consider it a truth that non-specific or false positive reactions are due to technical error rather than to unavoidable biological factors in non-syphilitic disease. Each such case should be studied and restudied with much care for possible concealed syphilis. Not only should the clinician give his attention to this aspect in serological diagnosis but the serologist should weigh each step of his technique and invoice his materials with unusual thoroughness. This part of the problem can be brought to a solution by the close supervision of laboratory procedure and the demanding of two tests such as the complement-fixation and precipitation test on each specimen.

Of equal or much greater importance to the clinician is the question of negative reactions in the presence of positive disease. A wide variance is evident in the data on this part of the subject and with the accumulation of reports this variance has become more marked. Weakly positive or modified reports when properly done are of great value. We cannot help but admit the inconvenience and nuisance of a single weakly positive reaction in the problem of a false or pseudo syphilis, but there can be no denial of the fact that this type of reaction is occasionally the first definite marker in a chain of evidence which leads to a syphilis diagnosis. On the other extreme there is considerable satisfaction but no special merit in observing positive reactions in those individuals evidently

syphilitic. It may be compared to finding fractures by x-ray when deformity is obvious. The outstanding value and many times the purpose in the employment of these tests is to detect the cases clinically latent and of doubtful existence; and since the sera of these may produce only weakly positive reactions the technique of the tests should be sensitive and of such merit as to encourage confidence in their acceptance. I think it can be accepted as a biological fact that the complement-fixation reaction and the other tests used in this connection are dependent for their action on the "reagin" or antibody formation present in the sera. Since this product which is closely associated with immunity is known to be a fluctuating factor the outstanding need of exactness and sensitiveness in these tests is evident. At best, I feel that no serological test can ever be expected to detect all cases of syphilis. The "reagin" or Wassermann substance is thought to be a product of cellular infiltration in and about the foci of infection, and since Warthin has shown that the spirochete may be at such a state of inactivity as to live in the heart muscle and other places without producing this usual infiltration it can easily be explained how insufficient amounts of "reagin" are possible and produce negative tests in the face of positive disease. These foci do not remain at a fixed state of activity and are in readiness for proliferation when the immune factor or antibody production permits. The Wassermann reaction, then, in its different degrees of positiveness is an index of spirochetal activity and its strength bears a definite relation to the growth and proliferation of the syphilitic infection. Clinically, it is important to appreciate the location of this activity because activity in some physiologically unimportant tissue may produce few symptoms where much smaller lesions in more important locations may give definite symptoms, while being productive of very small amounts of "reagin" in the blood. Thus such syphilitic activity may account for negative, weakly positive or modified complement-fixation reports. These possibilities make it clear, I think, that next to specificity sensitiveness of the tests done on this type of sera in the search for syph-

ilis is a quality of primary interest. The serologist in his anxiety to avoid falsely positive reactions may use methods of reduced sensitiveness and accepts the fact that he misses many cases of syphilis in order that his positives may be acceptable. In a degree the clinician can admit this principle in part on the one extreme, but as primarily stated the merit of this test is not merely to confirm clinical diagnosis but to aid in the diagnosis of cases with doubtful clinical findings and in those cases where the diagnosis by clinical and historical evidence is not possible. I think it is a fairly accepted principle of diagnosis that in a certain number of cases the presence of syphilis is detected only by serological examination. In this respect again it may be urged that two different tests may be employed, and I think it may be accepted as a fundamental principle in latent syphilis when small amounts of antibody are present. The error, if such may exist, may be expected on the side of the falsely negative reaction. It is in this respect with the great improvement in technique of complement-fixation and other tests that the laboratory has been of immeasurable assistance in clinical syphilology.

The employment of the Wassermann reaction and other serological studies in their relation to treatment and follow-up on treated cases form a chapter of unusual interest and importance. Since the basis or principle of action in these tests is based on the antibody or reactionary substance of the spirochete, in other words, the activity of the syphilitic process, I cannot help but conclude that repeatedly positive reactions after rest periods or during treatment are indices of continued infection. These patients are syphilitic and relapses are to be the expectation. It can also be expected logically in the vast majority of cases that the first sign of relapsing syphilis is the production, before any clinical manifestations may be noted, of a positive serology. This may be observed weeks and even months as the only sign of the syphilitic process. This statement is not meant to suggest negligence in the routine observation for clinical signs and symptoms but only to urge the use of this method as an aid in detecting the first sign of relapsing

syphilis. It is here again that the importance of technique and accuracy in the laboratory cannot be underestimated.

Finally, may I state as another fundamental principle that spinal fluid examinations are recognized and are a part of outstanding merit in the complete diagnosis and treatment of most cases of syphilis. We must insist upon a complete examination of the fluid. The single test many times is misleading as the same fundamental principles are involved here as in the examination of the blood. This examination should include total cell count, complement-fixation tests, colloidal gold and globulin. I think that we can state that no study of latent syphilis is complete without this information. I have seen cases of the infection of the central nervous system

escape detection in the minutest neurological examination.

In conclusion, I would make a plea for better serological technique. Too much harm has been done by insufficiently trained and inexperienced technicians, to submit further to their unsupervised care the serological diagnosis of so important a disease. These workers should appreciate the necessity of thoroughness and should understand their reagents and be able to analyze difficulty and find possible error. There are no short-cuts to success when dealing with such values as these. It behooves the supervising physician as well as the laboratory to uphold the dignity of this principle of serological diagnosis, the determination and establishment of which is one of the most brilliant feats of biological science.

Undulant Fever in General Practice*

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It is my purpose in presenting this paper, not so much to present the problem from a technical standpoint, but more to present it with the hope of creating more interest in the disease by the men in general practice.

In making a survey of this disease, the following terms are used synonymously: Undulant fever, Malta fever, Gibraltar fever, Melitensis septicemia, Goat fever, Mediterranean fever, Brucella fever, and several others.

There is reference in the writings of Hippocrates which apparently are instances of this fever. In the eighteenth and early nineteenth centuries, medical officers of the British army and navy reported cases of recurrent and intermittent fever in Malta, which did not entirely resemble typhoid fever, but was not differentiated from it. It was not until 1859 that it was accurately written up by Marston as it existed in Malta, and he named it Medi-

terranean remittent or gastric remittent fever. In 1879, Veale again described the disease in patients who had returned to England from the Mediterranean area, after they had had military duty there. In 1886, Bruce isolated a micrococcus from the spleen of patients dying from the disease, and reproduced the disease in monkeys. In 1897, Wright discovered that there was a specific agglutinin in these patients.

In 1904, a commission was appointed by the British government to make a thorough study of the situation in Malta, to determine the origin of the infection in man, and establish methods of prevention. They found that the main source of infection was from goat's milk. The source was removed, and the disease was almost immediately brought under control.

Epidemics of abortions in cattle have been recorded in the Scriptures. Orosii records an epidemic in Rome in 278 B. C. In the early part of the nineteenth century, the contagious character of the disease was noted by Lawrence and Skellet. In 1886 it

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became so evident that it was proposed in the British House of Commons to bring the epidemic abortions of cattle under the contagious disease (animal) act. In 1895, Bang and V. Stribolt discovered the specific causative organisms. These reports were later confirmed by research men in other countries of Europe, and in 1910 MacNeal and Kerr isolated the same organisms in the United States.

The condition existing in man and in cattle were studied simultaneously, but it was not until 1918, when A. C. Evans demonstrated the extremely close similarity between the organisms causing the two diseases. It has since been repeatedly proven that they are both caused by various strains of the same organism. That organism is called *Brucella*, after D. Bruce, who first isolated the organism in 1886.

The natural habitat of the *Brucella* is in domestic animals. Infections occur naturally in cattle, goats, sheep, swine, mules, horses, dogs, cats, rabbits, rodents, chickens, and ducks. This disease produces a very great economic loss, as it greatly inhibits the reproductive power of the animal, and renders them less desirable for use. The main problem to man, however, is that the infection in these animals is the source of infection in man. Practically the entire infection in man has its origin in swine, cattle, sheep and goats. The problem of controlling the disease in these animals is truly a great one, because they may become infected with any strain of the organism from any of the animals or fowls mentioned above. Though the natural habitat is the domestic animal, the *Brucella*, *Meletensis* and *Abortis* can live for long periods of time outside the body. The organisms have been shown to retain their vitality in moist manure for seventy-five days, in fetal membranes, in cool weather, for ninety days, and in tap water for thirty-five to forty days. The source of infection to these animals, as to man, is through the intestinal tract. Therefore, it is very evident that the control of this disease is a very difficult one, as, once a pasture becomes infected, and there are infected cattle in the herd, it is a constant potential source of infection to the rest of the herd.

The routes of infection to man are, (1) the ingestion of the organism through the intestinal tract by using dairy products

from infected cattle, as milk, cream, cheese, etc., and by eating poorly cooked meat from infected animals; (2) and through the broken or unbroken skin, as in persons treating or caring for infected animals, or in the handling of meats from infected animals.

Once a cow becomes infected, the normal excreta will show the presence of organisms. After a few weeks they will disappear from the urine, but will remain in the excreta from the intestinal tract. Invariably the udder becomes infected, and may remain so for months, or even years. It is very evident, therefore, that the most likely source of infection of the cases in this section of the country, is from the use of dairy products. A careful investigation of the records of the State Milk Inspector will reveal a striking number of cattle in our state that have been positive reactors to Bangs disease, and a check into the records of our State Epidemiologist will show a marked increase in the number of cases of undulant fever reported. However, there has been no effort on the part of most doctors to make any study of undulant fever. Therefore many cases are being overlooked.

Undulant fever has formerly been considered a disease of young adults, with a strikingly large percentage in males. This could probably be explained by the fact that the male adult comprises the large proportion of cattle and meat handlers. However, undulant fever may affect one of any age. In a paper presented by Dr. Fred Angle of Kansas City before the recent session of the *American College of Physicians*, he gave reports of a survey made within three weeks prior to the session on five thousand one hundred forty school children, on whom he made skin tests for undulant fever. He reported four hundred fifty nine or 8.9 per cent positive reaction for the skin tests in which *Brucellin* was used. He had not completed his survey, but he had been able to contact one hundred fifty of these four hundred fifty-nine children. He determined that thirty-five per cent of these had no clinical symptoms of undulant fever, but that sixty-five per cent had one or more clinical symptoms. It has been thought formerly that the positive reactions in children was produced by ingestion of milk with the or-

ganisms in it, and not from the disease itself. But the present opinion is that it can be produced only by the actual infection.

When the infected material is taken into the intestinal tract, or through the skin, the organisms penetrate the mucous membranes, and reach the general circulation, thus becoming a systemic disease from the beginning of the infection. The usual incubation period is from fourteen to seventeen days, however, cases have been reported as early as six days after exposure.

The symptoms of undulant fever are varied. There may be any chain of symptoms. Hughes says, "So varied are the symptoms, and so uncertain the duration and course of this fever, that it is impossible to give a description to which all cases can be referred." The onset is usually gradual. There is usually weakness, with a low-grade fever, which may be recurrent, intermittent or undulating. There is profuse sweating, and often rigors. There is very frequently generalized aching pain, or headache, backache, aching in the joints, and sometimes neuritis. There is also loss of appetite, loss of weight, and often abdominal cramps and constipation. There is usually a coated and swollen tongue, and a very foul breath. There may be tenderness to palpation of the abdomen, and enlarged and tender spleen and liver. A patient usually becomes very listless and very nervous, and often has insomnia. The symptoms persist throughout the course of the disease, and are present in proportion to the seriousness of the disease. The course of the disease may be from two to three weeks, to several years. Dr. Angle reports one case who has had persistent fever for over twenty-one years on which a diagnosis of undulant fever has recently been made.

Routine laboratory examinations show a moderate anemia in persistent cases, and a leukopenia. There may, or may not be excessive pus in the urine. There is quite frequently pain in the region of the kidneys, and bladder, with pus being present in proportion to the pain.

Due to the extreme variableness of the symptoms, it is extremely difficult to make a diagnosis from the clinical symptoms alone. Any case, however, which is not readily diagnosed, and has the above

symptoms, should be considered as suspicious, and an attempt at diagnosis of undulant fever should be made. There are specific agglutinins present in the blood in most cases, which gives a specific precipitation test at certain stages of the infection. This, however, is variable, and like the Widal test, is not obtained early. These agglutinins also decline in quantity, in the blood, as the patient recovers, thus the precipitation test decreases in proportion. A definite skin reaction is obtained in practically all cases, and once present, will always be present, even after the patient has recovered from the disease. This test is made by intradermal injections of special dilution of vaccine containing *Brucella Melitensis* and *Abortis*, or by the use of *Brucellin*. If the test is positive, there is an area of erythema at the site of injection at two to four days following injection. In evaluating the case it must be remembered that a positive skin test may be present in a healed case, also that not all cases will show an agglutination. It must also be remembered that about ten to fifteen per cent of cases of tularemia produce a positive skin reaction, therefore a diagnosis must be made by a proper evaluation of the clinical symptoms, the agglutination test, the skin test, and the elimination of all other diseases.

This disease must be differentiated from typhoid and para-typhoid fevers, tuberculosis, malaria, endocarditis, rheumatic fever, influenza, and other more rare diseases, such as tularemia, septicemia, etc.

Once the diagnosis is made, treatment is not a simple procedure. General supportive and symptomatic measures should be instituted. Specific vaccine therapy seems to be the most generally used. A specific serum has been developed, but at the present time, has not proven practical. Intravenous administration of dyes has been used, but in most cases has been discarded as useless. Foreign protein therapy also has been used with some beneficial results. Some authorities claim very good results with the use of intravenous typhoid vaccine.

The course of the disease under treatment may be short, or it may extend over a long period of time. If it does not clear up immediately, it becomes chronic, and

in most cases becomes localized in some part of the body, thus producing a chronic focus. Organisms have been isolated from foci of infection as cholecystitis, hepatitis, peritonitis, salpingitis, oophoritis, phlebitis, arthritis, bursitis, otitis media, sinusitis, tonsillitis, apical abscesses of the teeth, pyelitis, orchitis, epididymitis, and many others. The chronic case, of course, will not respond to treatment until the focus has been removed.

One might ask when is a case cured. It cannot be definitely determined, but there are certain signs which indicate a recession of the infection. As the infection subsides, the subjective symptoms disappear, and the fever subsides. There is usually a return of the appetite and a gain of weight. There is a fall, or absence of the agglutination, and the blood picture returns to normal.

The morbidity in this disease is slight. It is capable of producing death, but the death rate is extremely low. The economic loss from the disease is very great, as the patient often is incapacitated for a long period of time. Even though he may continue to work, his efficiency is markedly diminished. This disease is a growing problem in our state. In a recent correspondence with Dr. Beyer, our State Epidemiologist, he informed me that in 1935, there were seven cases of undulant fever reported in the state. In 1936, there were ninety-six cases reported. He further stated that during those two years, twenty of the one hundred three cases for the state were reported from McAlester and vicinity (the home town of the author). It is my opinion that this disease is not localized to any one district. It is more likely that in most sections, it is going unsuspected and unrecognized.

In concluding this paper I wish to report briefly four cases which in my observation are rather typical of the twenty-two cases that have come under my care.

Case No. 1. Mrs. H. L. D. First seen June 10th, 1936. Height five feet, one inch. Weight one hundred sixty pounds.

This patient, a white female, age about thirty-two, came in with symptoms of pregnancy. There was nausea and vomiting, and she had missed two menstrual periods. There was generalized aching

pains and severe headaches. The blood pressure was 140/86. There was obstinate constipation. On July 17th, there was an abortion with profuse hemorrhage. She had begun to have fever about July 1st. Recovery from abortion was slow, and the fever and aching continued. A positive skin test and a complete agglutination was obtained about August 15th. She was given vaccine in August and fever persisted. The vaccine was repeated in September. Following this course the patient made an apparent recovery.

Case No. 2. Mrs. J. F. P. White female, age forty-one. First seen May 20th, 1936.

She complained of dull headaches, some disturbance of vision, pulling sensation in back and neck. Some soreness in fingers and joints, insomnia, and very marked feeling of lassitude. There was afternoon temperature for the past month, the maximum being 99.8.

Examination showed: pulse 68, blood pressure 98/62, general physical examination essentially negative. Basil metabolism rate minus 16. Urine negative, slight anemia and mild leukopenia. Blood sugar 111.

There was a positive skin test and agglutination test. One course of vaccine treatment was given. She had a very profound reaction from the vaccine, but her symptoms persisted. She was given intravenous typhoid, also with a severe reaction, but after a few injections, she became fever free, and her symptoms disappeared. The entire length of the infection was about nine months, if there is a recovery at this time.

Case No. 3. Mrs. W. B. V. first came under my observation in 1933. She complained of headaches, general aching, malaise, marked nervousness, insomnia, etc. She gave history of a pregnancy complicated by some kidney involvement one year before. She had marked abdominal pain, and food distress at times. The abdominal pain often became localized in the right lower quadrant. In 1935, she discovered she was having fever daily, also this year she had several attacks of pain in the region of her appendix, and the appendix was removed. She improved some after this, but after a few months the fever returned. In the spring of 1936, a positive

skin test and a positive agglutination was obtained. The routine laboratory examinations were about as reported in the previous case.

She was given vaccine therapy. The fever and other symptoms persisted. She later developed symptoms of pyelitis and a cystoscopic examination was done, and pus demonstrated in both kidneys. This has recurred at fairly frequent intervals. Her courses of vaccine did not relieve the symptoms. Her fever persists, and even as late as one week ago she had a rigor. She still has the typical signs of Malta fever, but no definite focus of infection has as yet been demonstrated.

Case No. 4. W. J. D. was the first case to be definitely diagnosed as Malta fever in McAlester, under our observation. There was very marked malaise, aching, lassitude, and fever, with often attacks of pain in the region of the gall bladder sufficiently severe to require opiates at times. A complete examination was made including routine laboratory work, which was negative except for mild anemia and leukopenia, gall bladder and gastro-intestinal x-rays, gastric analyses, chest x-rays for tuberculosis, blood cultures, blood sugar determinations, blood calcium determinations, etc., all of which were negative. Also he had examinations at Talihina, Oklahoma City, Topeka and Mayo's. About February or March, 1936, six months after the onset of symptoms, a positive skin test was obtained, and later a positive agglutination test was obtained. These were both repeated several times before a positive diagnosis was made. Treatment by vaccine therapy has not been entirely successful, and the patient still has positive clinical symptoms of Malta fever. This patient has not been able to carry on his work as a laboratory technician for more than a year.

In conclusion let me repeat that this disease is a growing problem in our state.

It has meant a great economic loss to the farmer and dairyman, who has an infected herd. It also means a vast economic loss to our state because of the decreased efficiency of the people suffering from the disease. But more than that, it causes a lot of suffering which can, to a large extent, be avoided. Though our treatment as

yet is somewhat limited, we can aid a large per cent of those suffering from the disease. By a proper understanding of the disease, and the education of our people, we can prevent the spread of this disease.

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The Army Medical Library and Museum

In the Army Medical Library and Museum in Washington, D. C., are housed some of the finest collections available in the field of medicine. The library now contains some 400,000 bound and unbound books and approximately 600,000 pamphlets and periodicals. Included in this material are about 450 incunabula of the total 600 in existence. This library and its Index Catalogue have been recognized everywhere as among the greatest of bibliographic facilities in the world. The House of Delegates of the American Medical Association has repeatedly gone on record as favoring a new building to house these invaluable collections. The present building was constructed in 1887 and the contents of both the library and the museum have outgrown their accommodations. Whether the Army Medical Library and Museum building is erected on the site of the Army Medical Center to round out that institution, which includes the Walter Reed General Hospital, the Army Medical, Dental and Veterinary Schools and the Biological Laboratory, or is to adorn one of the beautiful parkways or drives elsewhere in Washington is really not the vital consideration. The need for a new building is pressing. The construction of such a building would give opportunity for modernizing the equipment and making the materials far more available than they are now. It would serve as a monument to medicine in consideration of its services to human welfare.—Journal A. M. A., May 15, 1937.

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The Value of the Leukopenic Index in Allergic Diseases*

E. RANKIN DENNY, M.D.

TULSA

Before presenting to you the results of my studies concerning the leukopenic index as an adjunct in the diagnosis of food allergy, I wish to review very briefly the history of the development of this test from the time of its discovery by Vaughn in 1934.

HISTORY

Widal, Abrami and Iancovesco¹ some seventeen years ago suggested that a determination of the leukocyte count following the ingestion of milk might be of value in determining the function of the liver. In April, 1932, Vaughn observed a marked fall in the leukocyte count in a patient whose hemicrania developed following the ingestion of milk. This suggested to him that a quantitative estimation of the leukocytes following the ingestion of other foods might be of value in determining food sensitivity. So in November, 1934, before the *Association for the Study of Allergy* in Cleveland,² he presented his data and described the technique used, a hundred and ninety-one leukopenic indices forming the basis for his report.

His technique at that time was to take two fasting white blood counts at ten-minute intervals, have the patient eat the food to be tested, count the leukocytes at fifteen-minute intervals for an hour, and then a final count at the end of ninety minutes. He suggested that a drop of more than one thousand cells from the fasting count indicated sensitivity to that food.

In 1935 Rinkel³ modified the technique as described by Vaughn, which is the technique now used by several others who are doing these tests including Gay,⁴ Zeller,⁵ Squier, Madison⁶ and myself. Gay⁷ has found the test especially valuable in a study of patients suffering from peptic ulcer or in persistent hyper-thermia, and

Rinkel has made several contributions on its value in the study of patients suffering migraine, hay-fever, asthma and eczema.

Since starting this work in 1935 I have made 4,110 leukopenic index studies in patients suffering bronchial asthma, hay-fever, atopic eczema, migraine, mucous colitis, peptic ulcer, acneiform eruption, angioneurotic oedema, and urticaria.

TECHNIQUE

The technique described by Rinkel is as follows except for the statements with reference to the counting of eight hundred cells.

The patient comes into the office in a fasting state and rests for thirty minutes preceding the fasting count. Furthermore, the patient is not permitted any unusual exercise before coming to the office, although a short walk does not materially affect the fasting count. The food is prepared without the addition of condiments. Following the taking of the fasting count

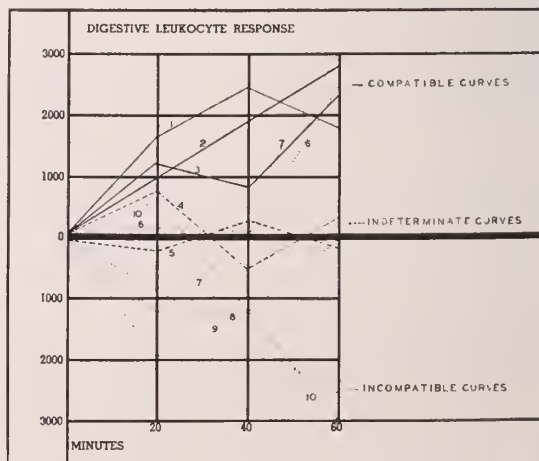


CHART I.—Types of curves obtained by plotting the leukocyte counts made at twenty, forty and sixty minutes after ingestion of a test food. The solid lines indicate compatible curves; the interrupted, indeterminate curves; and the dotted lines incompatible curves. (Rinkel and Gay.)

*Read before the Oklahoma State Medical Association Annual Meeting, Tulsa, May 11, 1937.

the food is eaten immediately, the patient returns to the reception room and rests and reads. He is not permitted to carry on conversation or smoke. In twenty, forty and sixty minutes after the meal, additional leukocyte counts are made using a one to twenty dilution, shaking the pipette a minimum of sixty times to assure maximum distribution of the cells in the pipette which will in turn minimize the variation of the number of leukocytes on each square mm. of the counting chamber. Both sides of the counting chamber are filled and eight square mms. are counted.

However, some three months ago, following some special experimental work in determining the coefficient of variation while counting eight square mms. (four hundred cells) and simultaneously counting sixteen square mms. (eight hundred cells), it was determined that a source of error could be minimized if our tests were made counting sixteen square mms. each time the blood was examined for a count. This modification of the technique as described by Rinkel is the one I am now using.

The white counts are then plotted on a graph as indicated in the accompanying charts.

Among the three types of curves, the compatible, the indeterminate and the incompatible, the indeterminate type is the one which gives rise to greatest difficulty in its interpretation. In fact, one has to rely solely on the clinical symptoms as the criterion for elimination of the food used when such a curve is obtained. I have found among this group some foods which, when included in the diet would cause symptoms, and others which may be kept in the diet without giving rise to trouble.

One may obtain a compatible curve in which instance the food definitely causes symptoms. An example of this may be noted in Curve 4 of Chart II.

It should be emphasized that all foods that show an incompatible curve do not necessarily provoke symptoms. I have not as yet analyzed the percentage of foods showing incompatible curves which give rise to clinical symptoms but Rinkel and Gay have estimated that ninety per cent of these curves have been associated with

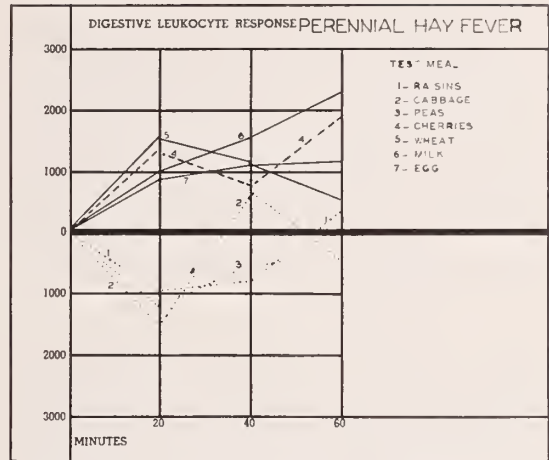


CHART II.—Curves obtained in perennial hay-fever patient in whom all skin tests were negative, both scratch and intradermal. NOTE compatible curves for wheat (5), milk (6), and eggs (7), and incompatible curves for raisins (1), cabbage (2), and peas (3). Cherries (4)—a compatible curve but a cause of clinical hypersensitiveness.

clinical manifestations of hyper-sensitiveness.

REPORT OF CASES

An example of the value of the digestive leukocyte response is that of a patient with perennial hay-fever whose symptoms began in 1931. At that time and during the subsequent five years she was under the observation of a very competent allergist who had repeatedly made intradermal and scratch tests to all inhalents and foods. He reported the tests entirely negative, with the exception of suggested reactions to orris root, grasses and house dust. However, her symptoms are as bad in the winter as they are in the summer months. Attempt to treat her with these extracts was unsuccessful.

Her history is of special interest in the fact that when she was away from home she would usually be free of symptoms. The history suggested a contact or an environmental cause. Before proceeding with the leukopenic index study, intradermal and scratch tests were made and no positive reactions were elicited. In February and March of 1936, fifty-six foods were tested by the leukocyte response and among these citrus fruits, green beans, peas, cabbage, raisins, chicken, tomato, beets, cucumbers, onion, shrimp, cranberries and lima beans showed incompatible curves. All of these foods when subse-

quently eaten provoked hay-fever symptoms with the exception of chicken. It is of special interest to note that of all the foods tested showing a compatible type of curve, cherry is the only food that causes symptoms. This is indicated in Chart II, Curve No. 4. This case also is of special interest in that compatible curves were found following the ingestion of wheat, milk and eggs.

The leukopenic index is of value in many cases of asthma, particularly in children. The eleven year old boy whose digestive leukocyte response is shown in Chart III gave no positive intradermal tests to the foods indicated. Milk and chicken both provoked symptoms. Three years ago he had asthma, and egg was eliminated from his diet on suspicion. He was temporarily improved. But during the past year he has had many attacks. Our study began in February of this year and he has been free of symptoms since eliminating the foods which gave incompatible curves. In addition to chicken and milk these included beef, white potato, spinach.

No other treatment has been instituted.

One occasionally sees patients in whom more than one type of tissue may show symptoms of hyper-sensitiveness. Such a case is that of a boy, age eleven, first seen June, 1935, who had nasal allergy and eczema from the age of eight months. Periodically he has had relief of symptoms, but

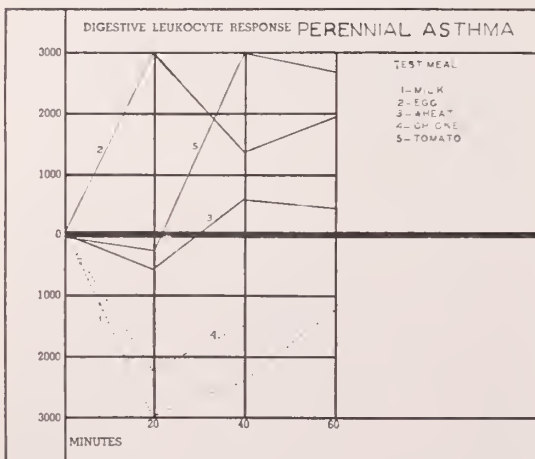


CHART III.—A case of perennial asthma who three years ago was clinically sensitive to egg. NOTE Curve No. 2 (and not clinically sensitive now). NOTE marked leukopenic reaction to milk (Curve 1) and chicken (Curve 4), both foods causing asthma.

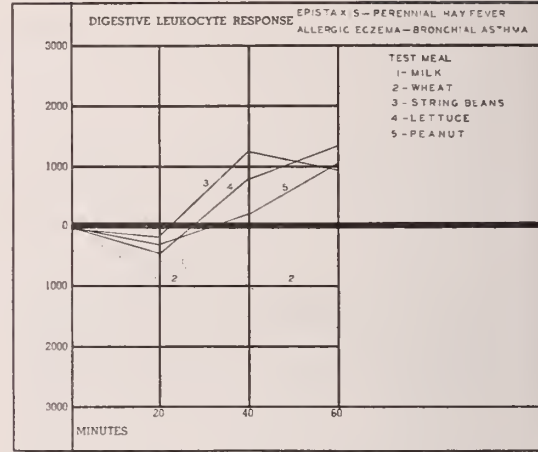


CHART IV.—A case of perennial hay-fever with nose bleeds, bronchial asthma, atopic eczema, whose skin tests were definitely misleading in that milk and wheat showed no reaction, whereas the digestive leukocyte response suggested hyper-sensitiveness to milk and wheat (and other grains). Subsequent study showed milk not to be a clinical factor, whereas all the grains on ingestion provoked symptoms.

there have been no periods during the last five years longer than three months when he would be totally free of either some nasal or dermal disturbance. He has had asthma periodically during the last four years. During the past four months he has had intermittent nose bleeds. Intradermal tests to milk, egg and wheat were negative.

He had an incompatible type of curve following the ingestion of milk and wheat, but the ingestion of milk did not provoke symptoms, whereas wheat caused an aggravation of the skin lesions. (Chart IV.)

Further tests showed the following incompatible foods according to the digestive leukocyte response: potato, grape, rye, lima beans, barley, oats, soy bean, buckwheat, banana, pineapple and prunes. All of these foods have been gradually added back to his diet with the exception of the grains, and he has remained entirely free of asthma, hay-fever and nose bleeds during the past year. However, he is infrequently slightly bothered with eczema of the hands.

The incidence of allergic factors in migraine is unknown. However, there can be little doubt that it is a factor in some patients. The migraine patient whose leukopenic responses are indicated in Chart V gave a history of also having suffered periodic attacks of bronchial asthma and per-

ennial hay-fever. He frequently had periodic attacks of migraine with scotoma, not infrequently unilateral, for seventeen years. Six hours after the patient ate wheat during a digestive leukocyte response test, he developed a severe migraine attack and subsequently repeated ingestion of bread caused an attack. He stated that following the egg and milk tests both of which gave incompatible curves, that a burning sensation in the stomach and a "greasy" taste in his mouth occurred. During the time the banana test was being made he developed sneezing and an extreme rhinorrhea.

He remains free of symptoms as long as he eliminates these foods from his diet.

During the past two years Gay has made observations of the digestive leukocyte response on patients suffering from peptic ulcer. I have studied one patient in great detail who four and two years ago had attacks of violent hematemesis, the cause of which was an ulcer in the duodenum. The usual Sippy treatment was given but the patient continued to complain of gas, indigestion, burning and at times abdominal pain. In October, 1936, we started determining the digestive leukocyte response to many foods in his diet. The curves of five of the foods which were tested are indicated in Chart VI.

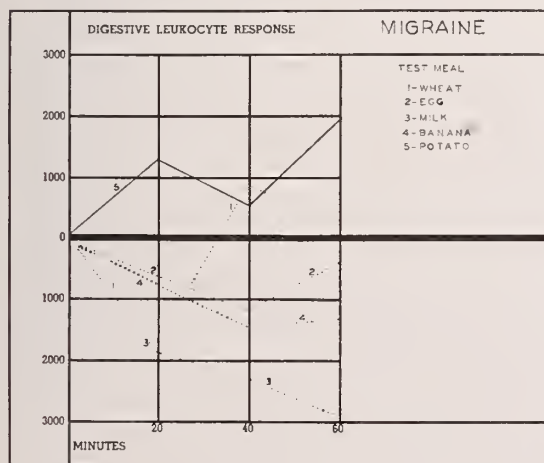


CHART V.—A case of migraine in whom the ingestion of wheat caused an attack of migraine within six hours after the test. He experienced a burning sensation in the stomach within an hour after the egg test. Following the ingestion of banana he had a fit of sneezing and watery discharge from his nose. He experienced no discomfort after the ingestion of potato.

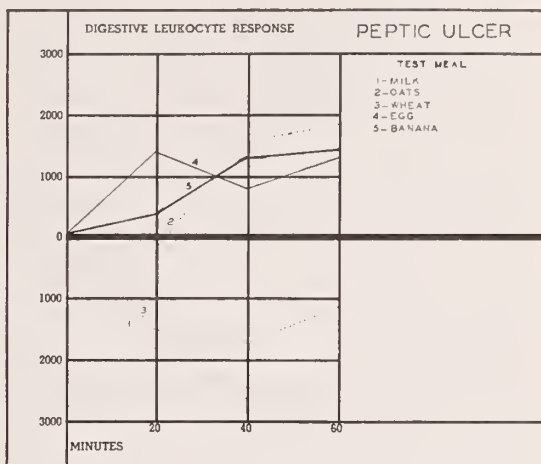


CHART VI.—Symptoms of gas, indigestion and sour stomach followed the ingestion of milk (Curve 1), oats (Curve 2), and wheat (Curve 3). No symptoms were produced following the ingestion of egg and banana.

One hour after the ingestion of milk he experienced a burning in the stomach. Thirty minutes after eating oatmeal and wheat he complained of a sour stomach and indigestion, and these symptoms persisted for three hours, at which time he took an alkaline powder for relief. Following the ingestion of banana and beef none of these symptoms developed. Complete elimination of these incompatible foods and others which showed an incompatible curve has made this patient comfortable and he no longer takes his alkaline powders.

The experience we have had with this one patient is typical of those patients studied by Gay, in whom complete relief of peptic ulcer symptoms can be given by the elimination of foods to which the patient is hyper-sensitive. Since no logical explanation has been given for the development of these ulcers, it would seem that the mechanism by which they are produced is comparable to the Arthus phenomenon, the basis of which is certainly an anaphylaxis phenomenon. These observations which Gay has made are the most important contributions that have been developed in recent years in the medical treatment of peptic ulcers.

Cunningham was the first to call our attention to the fact that acneiform eruptions of the face may be improved by the elimination of foods. The value of the digestive leukocyte response is as yet un-

known. The patient whose digestive leukocyte response to wheat, eggs, beef, milk and salmon is shown in Chart VII was a girl sixteen years of age, who had acneiform eruptions of her face, back and chest for three years. She had previously tried X-ray and vaccine therapy with some success following x-ray therapy, but it had recurred. The last treatment was given one year ago. Because of the fact that this patient also complained of hives, and the further fact that her mother suffers grass and weed hay-fever, it was thought advisable to observe her digestive leukocyte response to foods. By the elimination of milk from her diet the patient remained free of symptoms for nine months. At the end of this period she developed an attack of influenza. Following recovery of this disease she started taking milk again with the development of acneiform lesions of her face within one month after starting back on this food.

Some of these patients are definitely improved by the elimination of allergens from their diets. The fact that glandular therapy and x-ray therapy may benefit these patients does not refute the idea that hyper-sensitiveness may be a factor in some of these patients.

COMMENT

Since Vaughan started this work three years ago, Rinkel, Gay, Zeller, Squier and I have studied the interpretation of the

leukopenic index in hypersensitive individuals, and from our observations it seems quite definite that the leukopenic index has a proper place in the study of patients who manifest clinical allergy. But a word of caution and conservatism would seem timely.

During the past two and one-half years I have made over four thousand studies on individual foods by the digestive leukocyte response method. I first used the technique as advocated by Vaughan, but following Rinkel's report on his modification of Vaughan's technique, his method has been used in my office. During the past few months I have made a special study of the accuracy of the customary method of making leukocyte counts, and this study leads me to believe that some of the errors and occasional inconsistency of the digestive leukocyte response in relation to clinical manifestations may be due to the fact that we have been counting too few cells. That is to say, the coefficient of variation in counting eight square mm. in making our tests is definitely greater than when twice the number are counted. Further studies are being made to determine whether this possible source of error will diminish the incidence of inconsistencies between the digestive leukocyte response and the clinical manifestations.

The mechanism by which leukopenia may develop following the ingestion of a food which acts as an allergen is unknown. In 1925 Sabin, Cunningham, Doan and Kindwall⁸ reported the occurrence of normal rhythms of white blood cells. It was their belief that there are showers of dying polymorphs which stimulated the production of leukocytes with a consequent increase in the total leukocyte count. In other words, at hourly intervals there are periodic increases and decreases of the total white count in normal individuals. Some six years later Ponder, Saslow and Schweizer⁹ reported on the constancy of the white cell count when large numbers of cells were counted, and from their studies one must conclude that no demonstrable change in the polymorph count occurs, which tends to refute the idea that showers of dying cells do not make their appearance in the circulation of sufficient magnitude to be discernible, and that the apparent large fluctuations were due

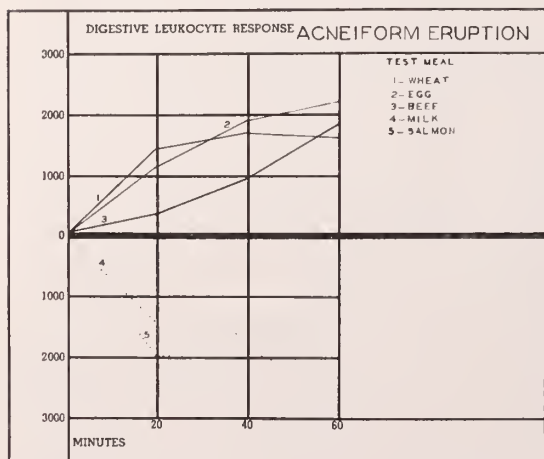


CHART VII.—Curves 1, 2 and 3, representing wheat, eggs and beef, respectively, demonstrate compatible types of curves. Patient clinically negative to these foods. The milk (4) and salmon (5) were removed from the patient's diet, and has remained clinically free of symptoms.

principally to errors of method in their determination. Ponder and his co-workers in counting the cells of a single sample of blood showed that the coefficient of variation when only two hundred cells were counted was a 7.7 per cent, when four hundred cells were counted a variation of 4.2 per cent occurred, whereas the coefficient of variation was only 2.3 per cent when a total of eight hundred cells were counted. More recently Zeller,¹⁰ in taking serial white blood cell counts under resting and fasting conditions found a very slight variation not exceeding seven hundred fifty cells, and emphasized that the apparent discrepancy in the findings of previous investigators were primarily due to the difference in the conditions of their experiments.

During the last two months I have made a study that is in part comparable to that of Ponder's, particularly with reference to the coefficient of variation in counting white blood cells as is customarily done in making routine white blood counts, and comparing the coefficient of variation found when a limited number of cells were counted with the coefficient of variation when a large number of cells were counted. That is to say, in counting four square mms. (two hundred cells) the coefficient of variation is approximately three times the variation found when sixteen square mms. (eight hundred cells) are counted. Since an exact quantitative computation of the total white count is imperative in the determination of the leukopenic index, any additional refinement in technique which will diminish the sources of error, is most desirable. Therefore, it would seem advisable for other investigators to adopt this technique, which will minimize an obvious source of error.

Meuller¹¹ has shown that a variation in the total leukocyte count occurs following vaso-constriction of the skin capillaries, and a simultaneous opposite type of reaction in the capillaries of the liver, stomach and other abdominal viscera which is mediated through a disturbance of the autonomic nervous system, and since we do observe a transitory pallor, which is caused by a dermal vaso-constriction, often preceding the onset of clinical manifestations in allergy, and the fact that this peripheral vaso-constriction is of sufficient

magnitude to occasion symptoms of chilliness immediately preceding the onset of clinical allergic symptoms, it follows that a variation in the leukocyte count should be expected with the change in the state of the dermal and visceral capillaries. If vaso-constriction occurs a leukopenia is present. If the capillaries are dilated a leukocytosis develops.

A word of warning should be given to those interested in this work, that one cannot expect results by the indiscriminate use of the digestive leukocyte response. If great accuracy is not used in making the counts, if the conditions under which the counts are made are not satisfactory, if a thorough knowledge of the interpretation of the digestive leukocyte response is lacking, and if an accurate account of the clinical manifestations is not kept on the part of the patient following the ingestion of the food, such a study will lead to great error in the determination of the food factors in the hyper-sensitive patient.

SUMMARY AND CONCLUSION

The history and description of the technique of the digestive leukocyte response is given. The anamnesis of patients suffering from perennial hay-fever, perennial asthma, atopic eczema, migraine, peptic ulcer and acneform eruptions are recorded.

I have found the digestive leukocyte response tests of distinct value in the diagnosis and treatment of patients suffering food hyper-sensitivity. It must be admitted that the skin testing by the scratch or intradermal methods to the protein extracts of food have limited value. Furthermore, it is a fact that skin hyper-sensitiveness does not parallel clinical respiratory or gastro-intestinal hyper-sensitive manifestations. We see some patients in whom the skin is so sensitive that a weal surrounded by an area of erythema develops at the site of the scratch or intradermal injection of all protein substances to which he is tested; in others we elicit no positive skin reactions to any substance tested by the skin method. I have found that the determination of the digestive leukocyte response in these groups of patients is a distinctly valuable adjunct in determining the causes of their clinical manifestations.

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The Kepler-Adler Pregnancy Test Demonstrating Histidine in Urine

CHAS. ED. WHITE, M.D., AND T. J. DUNN, B.S.
MUSKOGEE

We were very much interested in Ren-ton's report in the *South African Medical Journal*, Capetown, July 13, 1935, of the Kepler-Adler test as described by him. It is very simple and requires only approximately thirty minutes to complete.

This test may readily be performed by any general practitioner. It is not claimed to be as accurate as the Aschheim-Zondek or Friedman tests, but it has the advantage that a result is obtained in about thirty minutes. If the test is used in conjunction with clinical observations, it is of the greatest assistance in the diagnosis of early pregnancy. Five cubic centimeters of filtered urine are placed in a test tube, and bromine reagent (one cc. of *pure bromine*, one hundred cc. of *glacial acetic acid* and three hundred cc. of *distilled water*) is added by means of a pipet until the mixture becomes light yellow. Usually from about two to five cc. of the reagent is necessary. This is the most intricate part of the test, as it is necessary to have a minute excess of bromine in the urine before proceeding with the next step. The urine "consumes" the bromine, and the excess of bromine is tested for with the potassium iodide starch paper. The best way to do this is to cut a series of small squares of the white paper and put them on a piece of glass. By means of a glass rod, a drop of the mixture is placed on a piece of the paper. Free bromine gives a violet color. If there is too much bromine, the color will be dark violet. The object is to obtain a

pale violet reaction, indicating a minute excess of bromine. It is necessary that the color reaction remain stable for ten minutes. If the color is found to be too dark, a few more drops of urine are added until the correct color is obtained. When this color reaction has been settled, *i. e.*, after a lapse of ten minutes, three cc. of alkali reagent (ten gm. of ammonium carbonate, ninety cc. of distilled water and two hundred cc. of pure liquid ammonia) are next added and the mixture shaken and then placed in a steaming water bath for three minutes; if the test is positive for histidine and pregnancy, a mauve deepening to reddish purple, depending on the amount of histidine present, will result. This usually becomes more marked on standing for a few minutes. Best results are obtained by using a morning specimen having specific gravity around 1.020. A twenty-four hour specimen may be used if it has a high specific gravity and is probably more accurate, but we have had good results with morning specimens of high gravity. The only difficulty of this test is in interpreting the mauve or purplish color. This must be definite. A slight darkening or brownish coloring does not indicate a positive test. The bromine reagent is very unstable and must be kept tightly corked. It is frequently necessary to add ten to fifteen cc. of the bromine if it has become weak from age or evaporation.

In our effort to check the accuracy of the histidine test we have run three series

of tests. One of us ran a series of one hundred twenty-eight tests in which there were ninety-six positives, all correct, and twenty-nine negatives, three of which were incorrect.

The second series consisted of sixty-three tests. In this series there were fifty-seven positives and six negatives. A later check proved that two of the positives and four of the negatives were incorrect (or 3.42 per cent). All of the patients of this series were suspected of being pregnant and had missed one or more expected menses.

The third series consisted of twenty-four patients with whom the clinical evidence did not corroborate the results of the histidine test. This series was checked by the Friedman test with following results: the histidine test was correct in nineteen instances and incorrect in eleven instances, or 62.5 per cent correct and 37.5 per cent incorrect. The Friedman test was correct in twenty-three instances and incorrect in one instance, or 95.8 per cent correct and 4.2 per cent incorrect.

Of course the tests we have run are too few to warrant a definite opinion on the value of the test but we believe if it is used in conjunction with clinical findings and is checked by the Aschheim-Zondek test when it fails to corroborate these findings it will prove a great aid to the correct diagnosis of pregnancy.

We would like to mention some of the difficulties we have encountered in connection with the histidine test and suggest some corrections which it might be possible to make.

First, in a test of this kind there can be no middle ground. Either it is positive or it is negative and time will prove which is correct. Therefore, it is imperative that we learn the least amount of histidine required in a given specimen for a diagnosis of pregnancy. It is also necessary that we have some method to bring about a uniformity in the concentration of the urine or be able to titrate the exact amount of histidine and calculate the twenty-four hour out-put. To accomplish these results would require a large number of accurate titrations on both pregnant and non-pregnant women.

Next, there should be a more accurate

method to determine when we have added the proper amount of bromine to the urine specimen. The potassium iodide starch paper method would be accurate enough if there were a standard with which to make the comparison but without a standard it is our opinion that the variation in the amount of excess bromine is too great to give best results from the test.

Finally, when the test is finished there are two things necessary for the accurate reading of results. One is a uniform light and the other is a standard for comparison. We feel that we have met the light requirements by reading against a ground glass, back of which is placed a strong light. To prepare a standard from a known amount of histidine each time would add to the expense of the test as well as to the time consumed in its performance. However, it seems plausible that when the proper color for a standard is once established it can be reproduced in colored glass and handled in a method similar to the Sahli colorimeter.

CONCLUSION

We feel that this test, in our hands, has proven to be a comparatively accurate test, easily and rapidly done. However, we do not feel that this test should replace the Aschheim-Zondek or the Friedman modification.

We wish to thank Dr. Ira Brown Oldham, Jr., and Dr. Ira C. Wolfe, of Muskogee, for their kind cooperation in assisting us with the Kepler-Adler test.

Hyperinsulinism Associated With Calcified Tumor of the Pancreas With Surgical Cure

S. F. Herrmann and John A. Gius, Tacoma, Wash. (Journal A. M. A., April 24, 1937), cite a case of hyperinsulinism of a marked degree associated with a pancreatic calculus without gross adenomatous islet tissue. The fact that clinical cure followed surgical removal seems to establish the etiologic relationship. It is possible, however, that tumor tissue of microscopic proportions was destroyed at operation. On the other hand, the mechanism of the production of hyperinsulinism on the basis of a seemingly inert foreign body in the head of the pancreas has not been adequately explained on a physiologic basis. This subject is to be investigated further. The tumor was a calcareous mass, which could not be sectioned. No pancreatic tissue was found by the pathologist. Soft tissue surrounding the stony mass consisted of fat, connective tissue and several small lymph nodes. There seems to be an analogy between adenomas of the pancreas and of the thyroid. Both become calcareous and both may be associated with hyperfunction.

Treatment of Gonorrhea in the Male*

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CHAPTER IV.

ADJUNCTS TO TREATMENT

As has been mentioned in previous chapters, an early recovery from gonorrhea depends not so much on what specific local therapy is administered, but an equal responsibility rests on the patient as regards the hygienic care he exercises. If one could formulate on a percentage the importance of these two factors so far as cure is concerned, one would err little in allowing twenty-five per cent for the doctor's efforts and the balance to the patient. The patient should be constantly impressed with the fact that it is his cooperation in conjunction with the physician's treatment that an early cure is obtained. This cooperation from the patient must be gained, else the physician's efforts will be futile.

Probably if one could tabulate in relative importance the various cautions the patient must exercise in his daily life, the leading one would be sexual attitude. Sexual stimulation is probably the most potent factor of all, producing annoying relapses, complications, and disappointing chronicity of the disease. It must not be emphasized once but many times the necessity for the patient to refrain from all sexual stimulation, even to the point of controlling lascivious thoughts. Intense engorgement of the parts incident to erotic stimulation is the enemy of early cure. Self-discipline in this respect should continue until he is without question cured. Obviously, in the case of the married, separate beds is the only practical method of achieving this end.

Often one sees patients who manage very satisfactorily with their diseases for the first six weeks and seem to be conquering their infection splendidly. Then sexual relations are indulged in, or as it happens in more instances, they allow

themselves to become stimulated without completing the act with the result that there occurs a flaring up of the infection which requires several extra weeks of treatment to abate.

Alcohol seems to have a serious detrimental effect on the individual who is suffering from gonorrhea. The drinking of several bottles of beer has been observed to be followed by a sudden activation of the infection even in cases that appear presumably cured. Acute posterior urethritis has often followed the imbibing of liquor by affected individuals. Certainly there is sufficient clinical experiences at hand to place the taboo on all intoxicating beverages for at least the first few months of the disease.

Regular meals, regular hours, sufficient sleep, moderate but restricted exercise, and a placid, unworrying morale are obvious hygienic instructions which aid in fortifying the individual's resistance toward all chronic diseases. The diet probably plays little importance in the cure of gonorrhea with the exception of counseling against those substances which in the process of excretion irritate the urethral mucosa. Peppers and highly seasoned sauces had best be abolished, but otherwise the diet differs little from the ordinary routine, provided it is taken with some regularity and of correct quality and quantity.

Urine is a very efficient irrigating medium that effectually keeps the urethra free from accumulations of pus. Copious quantities of water by mouth not only keep the urethra flushed by the frequent urinations, but it may aid in a few cases in preventing backward extension of the infection.

Alkalization of the system by the administration of citrates, bicarbonates, etc., has many adherents. It doubtless has little effect on the ultimate outcome of the case;

*Second installment of the serial "Treatment of Gonorrhea in the Male." The first installment appeared in the May issue of The Journal.

however, there seems to be an impression somewhat substantiated by clinical experience in acute stages of the disease, they help in maintaining urinary comfort.

Drugs administered for the purpose of making the urine antiseptic have been found for the most part to be of little value in the treatment of gonorrhea. A few doctors and many pharmaceutical houses advise their use, but the general experience has been found disappointing. Caprakol, pyridium, serenium, and methylene blue are a few of the more common examples. Methenamine, a very potent drug in the treatment of the majority of non-specific infections of the urinary tract, is definitely contra-indicated in gonorrhea. The liberation of formalin, incident to its excretion, is extremely irritating in gonorrheal infections.

However, despite the disappointing results obtained by mouth medication for gonorrhea, there has recently been introduced a drug which seems to hold a very distinct therapeutic value. This is sulfanilamide, or it is better known as prontosil. This drug was originally presented because of its curative effect on streptococcal infections. It was also found to be efficacious in meningococcal infections and due to the close morphological similarity to the gonococcus it was felt a clinical trial in Neisserian infections would prove beneficial.

The drug is administered in doses of twenty to thirty grains daily; one or two five-grain tablets may be taken with a large glass of water after each meal and at bedtime. It seems to be relatively non-toxic with the exception of some gastric disturbance complained of on the part of a few taking the larger dosages. Symptoms such as nausea, vomiting, headache, dizziness, and sometimes an unexplainable slight rise in temperature are a few of the toxic manifestations. The production of sulphhemoglobinemia has been reported as a rare complication. All of these disturbances seem to disappear promptly when the drug is stopped. The headache, vomiting and dizziness have been explained on the basis that sulfanilamide lessens the alkali reserve of the blood, producing an acidotic state. It has been recommended

that if a mild antacid be given in conjunction with it, the symptoms are somewhat abated.

A brief clinical experience with sulfanilamide has shown results which are very satisfactory but not conclusive. In a few cases of acute gonorrhea in which it has been given, some have obtained marked improvement in their infections as observed by a cessation of the penile discharge and a clearing of the urine within three to four weeks of the onset of their disease. Six patients having chronic prostatitis of long duration who have been given the drug showed variable results; in two, the prostatic secretion became free of pus within ten days; two more stated they had gained marked relief from the perineal and back pain with which they had been previously bothered, however, examination of the prostatic secretion showed no marked change in the amount of pus as compared to past examinations. The results in two were unsatisfactory, and the type of medication was abandoned. In four instances of acute posterior urethritis incident to gonococcal infection, there was a marked relief from the frequency and stranguary soon after prescribing the preparation. There was also a lessening in the amount of pus in the voided urine specimens.

An investigation is now being made at the University Hospital, which will be reported later, on the bactericidal value of the drug when excreted in urine. Preliminary data indicate it has very definite bactericidal value in many of the commoner organisms that affect the urinary tract. This, however, does not explain its curative action in gonorrhea. Doubtless, following its administration there is some systemic effect on the defense mechanism of the body which inhibits their growth.

It must be emphasized the drug is yet in an experimental state, and its place, as well as limitations, are undefined. Further clinical observation is necessary to thoroughly evaluate its therapeutic status in the treatment of gonorrhea.

Sandalwood oil is another drug that seems to be of more than doubtful value in the relieving of distressing urinary

symptoms incident to the disease. Many have observed that when it is given in gonorrheal infection which is attended by excessive urethral irritation, especially on urination, it aids in alleviating these painful symptoms. Certainly it has no specific effect on the clinical course of the disease and should be used only for symptomatic relief.

The use of foreign protein therapy, which includes mercurochrome intravenously, dilute hydrochloric acid, milk preparations, seems to hold a definite place in the later stages of the disease, but it is difficult to see their rationale in the acute phases of the infection. For the first six weeks during which the patient's body is struggling with an excess antigen in the form of virulent gonococci they are best left out of the therapeutic regime.

As regards the care of the parts affected, the patient should be advised to keep the penis as clean as possible. The pus exuding from the urethra is at times extremely irritating to the mucosa of the glans penis and foreskin; annoying swelling of these parts results from carelessly allowing it to stay in contact with the tissues too long. The penis should be washed frequently and the discharge allowed to collect in a loose-fitting gauze dressing. One will find a most perfect device for this purpose in the well known tobacco sack dressing which is easily available in more convenient forms at drug stores, marketed as a sanitary dressing.

Before closing, a therapeutic adjunct useful in all stages of the disease is quite often forgotten but holds tremendous value, not only as a measure in obtaining relief from pain, but seems to be of possibly some curative value. That is the use of hot tub baths and hot soaks to the penis. The antiphlogistic effects of moist heat have been verified by numerous observers in the past. It cannot be emphasized too much that it should be used often, especially during the early stages of the disease. The good results from hot sitz-baths is especially evident when any hyperacute condition prevails. It relieves congestion, allays pain and makes the patient much more comfortable than he would otherwise be.

CHAPTER V

TREATMENT IN THE LATER STAGES OF THE DISEASE

Unfortunately, not all gonorrheal infections of the urethra yield to simple anterior injections. Obviously an infection limited to the anterior urethra presents an excellent outlook for early cure. One must realize, however, that simple anterior urethritis throughout the course of the disease is a rarity; posterior invasion at some time or other is the rule.

The physician must not be too pessimistic as regards a satisfactory outcome even when he observes the posterior structures involved. Due to the relatively less vulnerability of the posterior urethra towards the gonococcus, as compared to the anterior urethra, many cases spontaneously go on to complete recovery in a reasonable length of time with the treatment previously described. For this reason we do not advise early treatment of the posterior urethra even when infection seems grossly present. The instillation of medicine in the posterior urethra too early before sufficient immunity has been developed, encourages an exacerbation of the infection with the consequent result of deeper tissue involvement. It is better to continue with the routine therapy of the anterior urethra at the same time watching the progress of the case by the daily two-glass test until three or four weeks have elapsed. If the second glass shows a lessening in the amount of pus, the indication for posterior treatment becomes less definite. However, in a few there comes a time when one must recognize the necessity for treatment in this region in order to expedite recovery from the disease.

To dogmatically advise a definite time following the onset of gonorrhea before initiating posterior treatment is probably an error. The physician must be guided in this respect not only by the patient's response toward previous treatment, but also the appearance of the infection. Any tendency toward undue acuteness of the inflammatory process means treatment is definitely not indicated. A few may appear to benefit by local treatment within three or four weeks, and in others it may be advisable to wait twice this long. Possibly one could state as a general rule in most

cases if the urine constantly shows cloudiness in the second glass at the end of a month cautious attempts to treat the posterior urethra are indicated.

We achieve this by a posterior instillation of the same medication used in treating the front part of the channel; advising the patient to relax his urinary sphincter during the course of injection, and allowing the medicine to flow into and bathe the posterior urethra and bladder neck. A slight bit of pressure on the rubber bulb of the syringe will help in overcoming the tonic resistance of the sphincter muscle. Assuming the recumbent position will also be found a helpful aid in allowing the medicine to pass easily into the bladder. One may begin with only a syringeful but as time progresses several syringefuls may be injected. Only one treatment daily is necessary.

This simple procedure is continued for four or five days until it is proven no harmful effect in the form of an aggravation of the disease is likely. We then investigate the prostate for infection. The freshly expressed secretion is examined microscopically, and if more than ten cells to the high power field are found, prostatic massage is added to the therapeutic regime, preferably performed before instillation of the medicine. Massage should be done not oftener than every three to five days in a series of about six or eight and followed by a rest period of several weeks. This rest period should also include cessation from all local treatment of the urethra. One will find this two weeks' rest period the ideal time for the administration of vaccine.

At the termination of vaccine therapy the active attack on the prostatic infection is resumed. Frequently one will find little urethritis present at this time; the discharge very scant or even absent, and not rarely a clear urine will be present. When no discharge is present and the urine shows only a few shreds, it is probably better judgment to limit the number of urethral injections to a minimum or even abandon them altogether. There is no particular reason to subject a mucosa relatively free from inflammatory reaction to the daily insult of more or less irritating substances. It must be remembered

urethral injections alone will at times keep a discharge active. No part of the treatment of gonorrhea is more abused than vaccine therapy. When used intelligently they are of inestimable value, but an indiscriminate application not only proves them disappointing, but productive of harm as manifested by an unyielding, stubborn infection. It must be realized that early in the course of an infection the individual's defensive mechanism is attempting to cope with an overwhelming dose of antigen in the form of virulent gonococci and their products. To give gonococcus vaccine at this time is to add insult to injury and seems to produce an inhibitory action on the normal immunologic response.

The reaction of the tissues toward the bacteria must arrive at a static condition to observe the beneficial effects of vaccine therapy. Administration of small doses of vaccine at such time tends to stimulate the cells to further complete a cure. In the earlier stages of the infection, vaccines should be used made from the pure culture of the organism. However, the older the infection the more value seems to be derived from the use of mixed cultures incorporating the staphylococcus and streptococcus. Practically always these organisms are in the background as contributory agents for chronicity.

Vaccines are always started in small dosages; one to two minims of the regular stock preparations containing 1,000,000 organisms to the centimeter. Each successive dose is increased very cautiously, given every third day until one-half centimeter or more can be administered at a time without reaction. One should constantly watch the effect of vaccine and be guided in the amount given by any severe local or systemic reaction. Quite often vaccine injected in larger doses than can be tolerated may flare the local urethral infection to activity, inducing a discharge for a few days. One should strive always to keep the dosage just below the point of tolerance.

Physicians are constantly besieged with various and sundry preparations both of a specific, but more often of non-specific nature which are advocated to be given hypodermically or intravenously for the

cure of gonorrhea. Invaluable as non-specific therapy has proved itself as an aid to the cure of many infectious conditions, it must be considered inadequate therapy when used as a sole method for the treatment of gonorrhea, judged by our modern day standards. Certainly one can hold no reproach for the physician who for some reason or other desires to use non-specific protein therapy as an adjunct in the cure of gonorrhea, especially in its later stages; but it is he we censure who carelessly advises a course of injections for the treatment of the disease without paying the least attention to the prostate or other infected structures. Injection therapy in itself certainly is less demanding of the doctor's time and for that reason more lucrative to his pocketbook but is either an admission of his ignorance of proper therapy or is professional culpability.

(To be continued.)

Registration Under Harrison Narcotic Act

On or before July 1, every physician registered under the Harrison Narcotic Act must reregister with the collector of internal revenue of each district in which he maintains an office or a place for the treatment of patients. Failure to reregister within the time allowed by law adds a penalty of twenty-five per cent to the annual narcotic tax payable at the time of registration and in addition makes the physician in default liable to a fine not exceeding \$2,000, or to imprisonment for not exceeding five years, or to both. While the Commissioner of Internal Revenue has been lenient in the past in enforcing the criminal penalties provided by the act for tardy registration, continued disregard on the part of some physicians of the requirement of the act with respect to reregistration will inevitably lead to criminal prosecutions. In recent years the commissioner has given some negligent or recalcitrant physicians the choice between paying substantial sums by way of compromise in lieu of the penalties for their offense or, as an alternative, accepting criminal prosecution, with resultant publicity and liability to fines of indefinite amounts and possibly imprisonment. This was an act of grace on the part of the commissioner; under the law he might have instituted criminal prosecutions without allowing the offending physicians any choice in the matter. Physicians must bear the requirements of the act in mind. If tardiness in registration results in criminal prosecutions, hereafter, they must recognize that ample notice has been given them.—*Journal A. M. A., May 22, 1937.*

Observations of Etiologic Relationship of Achylia Gastrica to Pernicious Anemia:

The observations of W. B. Castle and Thomas Hale Ham, Boston (*Journal A. M. A., October 31, 1936*), on patients with pernicious anemia fail to sustain the conclusions of Greenspon. 1. Normal human gastric juice does not contain, on oral administration, an "antipernicious anemia principle" effective without contact with food (extrinsic) factor. 2. Hog stomach mucosa contains both a ther-

mostable (extrinsic) factor and a thermolabile (intrinsic) factor presumably responsible for the activity of such mucosa and of whole desiccated hog stomach. 3. Incubation of normal human gastric juice for two hours at 37.5 C. in the presence of native pepsin and hydrochloric acid inactivates only a portion of its content of intrinsic factor. 4. Beef muscle (extrinsic factor) and gastric juice (intrinsic factor) administered without opportunity for contact are not effective in pernicious anemia. Greenspon's recent experiments have led to the following modified conclusions in respect to former observations: 1. The negative results of the administration of substances after incubation with gastric juice for longer periods than two hours at 37.5 C. at an acid reaction cannot be accepted. 2. Lack of extrinsic factor in substances so incubated with gastric juice is not established by negative results. 3. Preliminary incubations should not be employed in testing the blood-forming activity in pernicious anemia of mixtures of gastric juice and various substrates.

Metastatic Tumor of the Heart: Case Diagnosed During Life

Maurice A. Schnitker and Orville T. Bailey, Boston (*Journal A. M. A., May 22, 1937*), describe the case of a patient in whom cardiac disturbances developed resulting from metastatic carcinoma of the heart, which was diagnosed clinically. The primary tumor was in the right main stem bronchus and reached the heart by direct extension, with associated auricular flutter. Only one other instance of auricular flutter resulting from cardiac metastasis has been diagnosed before death, that one from a reticulum cell sarcoma of cervical lymph nodes (Fishberg's). A case of congenital rhabdomyoma of the heart and another of metastatic tumor of the pericardium had associated auricular flutter, but the neoplasms were not recognized in either instance during life. In the 3,570 necropsies performed in the Peter Bent Brigham Hospital (1913-1936) there have been in all nineteen instances of cardiac neoplasm, an incidence of 0.53 per cent. None of these except the one here reported were recognized during life. The authors' case presents an unusual opportunity to follow the development of neoplasm in the heart by repeated clinical studies, electrocardiograms and necropsy.

Medical Treatment of Meniere's Syndrome

Madelaine R. Brown, Boston (*Journal A. M. A., April 3, 1937*), states that six patients with Meniere's syndrome from the neurologic out-patient department of the Boston City Hospital and six from that of the Massachusetts General Hospital have been placed on a low sodium diet with the addition of ammonium chloride. On this regimen, over periods ranging from six months to twenty-two months, none of these patients have suffered a severe attack, although mild dizziness and a feeling of fullness in the head may remain. In four a lapse in therapy was followed by an attack. Two patients have been free from attacks, although therapy was discontinued after three months and one year respectively. Although one sufferer from dizziness due to hypertension was relieved by a low sodium diet, four patients complaining of vertigo unaccompanied by deafness were not relieved by the diet and ammonium chloride. An unexpected source of sodium appeared in the course of this study. Since these patients had nausea or vomiting it was quite natural that they should use sodium bicarbonate or compound effervescent powders. The apparently unsuccessful treatment of two patients was remedied by eliminating these medications.

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Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

ANNUAL MEETING SUCCESSFUL

Perhaps one of the most important and successful Annual Meetings of the Association was held at Tulsa this year, the Tulsa County Medical Society doing everything within their power to make the work of the Association progress smoothly and efficiently.

The accommodations at the Mayo Hotel were ample to take care of all phases of the Association's work as well as housing most of the members in attendance. The hotel management has always shown our Association every courtesy and this attitude of theirs is greatly appreciated.

Our guest speakers presented material that was much appreciated by the large

number of doctors who heard them. The Scientific Sections, although not as well attended as at Enid, presented subjects that were highly instructive.

At the meetings of the Council and House of Delegates, as the minutes in this issue will show, business of great importance was transacted and the reports of the committees indicate that more has been accomplished by the Association in the past year than in any other year of our existence. The political activity of the Association, the past year, during the recent session of the Legislature, led to the passage of the Basic Science Law, and the obstruction of some vicious legislation that had been introduced by other interests. The passage of the Basic Science Law is the greatest forward step in the regulation of the healing art that has been placed upon the statutes of Oklahoma and not only should the medical profession but the citizenship of Oklahoma appreciate this accomplishment. The members of our Association should enlighten themselves as to the attitude of their respective legislators relative to our Legislative Program and see to it that those who supported these important measures are remembered should they present themselves for reelection. A great deal was said by the daily press relative to the report of the Council to the House of Delegates in which the remark was made that "we have spent a great deal of money," and those who opposed our legislation would like to construe this remark to indicate that legislation had been bought. This, of course, is not true as the only money which was spent was spent in a purely legitimate manner and while it was a great deal of money to us it was not a great deal in comparison to funds that are used by some other groups fostering legislation.

The endorsement of a Hospital Insurance Plan by both the Council and House of Delegates is a step in the right direction and if you will read the minutes of the House of Delegates you will find a copy of the resolution. If these plans and specifications are carried out it appears to us that it will help to solve the problem of the cost of hospitalization to those in the lower income brackets.

The attitude of Governor Marland to-

ward organized medicine in Oklahoma has been very friendly and a resolution approving the Governor's Highway Safety Law was unanimously passed by the House of Delegates and we are thankful indeed that we have a friend who is the chief executive of the state.

We have had the services of an Executive Secretary for our Legislative Committee during the past few months and a very complimentary resolution was passed by the House of Delegates in appreciation of the excellent service J. B. Harper has rendered. It is our sincere hope that some arrangements may be made by virtue of which we may be able to finance his office during the coming months.

With the induction into office of our new President, Dr. Sam A. McKeel, we will continue to have a very efficient man at the helm and one who will use his every effort to forward the interests of organized medicine in Oklahoma.

As we start a new year under the new administration let every member accept his individual responsibility and give your new officers the support that will be necessary if they are to accomplish the great good which is possible.

Editorial Notes—Personal and General

DR. GLEN W. McDONALD, Ada, has been appointed as director of the full time county health unit in Pontotoc county.

DR. J. T. LOWE, Mangum, has been appointed county health superintendent of Greer county.

DR. and MRS. J. A. MUNN, and DR. and MRS. L. S. WILLOUR, McAlester, were among the Oklahomans taking the boat trip from Galveston to New York, with a day stop off at Miami, Florida. They attended the meeting of the American Medical Association, Atlantic City, June 7th-11th.

DR. I. W. BOLLINGER, Henryetta, is reported ill with pneumonia.

DR. HENRY H. TURNER, Oklahoma City, attended the meeting of the American Medical Association in Atlantic City in June.

DR. JOHN D. CAMPBELL, Fairview, is leaving July 1st for Buffalo, New York, where he is accepting a residency in neuropsychiatry. He will probably be in the east several years.

DR. CHARLES K. MILLS, McAlester, took the examination for certification given by the American Board of Ophthalmology which was held in

Philadelphia in June. He also attended the meeting of the American Medical Association in Atlantic City and attended the Chevalier Jackson Bronchoscopic Clinics also in Philadelphia.

DR. C. S. BOBO HONORED

On the evening of February 25th, a testimonial dinner was given Dr. C. S. Bobo at the McFarland Memorial Church in Norman, honoring this man who is a very distinguished member of the medical profession of Oklahoma, who had reached his eighty-first birthday. About ninety guests, members of the medical profession throughout the state, old friends of Dr. Bobo, and young men who were his students, were present.

Dr. D. W. Griffin, superintendent of the Central State Hospital, acted as toastmaster. Many speakers of prominence attested to the high esteem in which Dr. Bobo is held not only as a physician but as a citizen.

Dr. Bobo has been made a life member of his county medical society and the Oklahoma State Medical Association and will be recommended to the House of Delegates of the American Medical Association which meets in Atlantic City, for Affiliate membership in that organization.

He began his practice of medicine in Texas in 1884 and came to Oklahoma in 1898. He was president of the Oklahoma State Medical Association in 1907-1908 and has held the position of Dean of the Medical School of the University of Oklahoma. Since 1933 he has been director of student health service at the university and in many ways has served through his long and useful life in many important capacities both as a physician and citizen.

Works Progress Administration Notice

It is requested that the attending physician selected by the Works Progress Administration, Resettlement Administration, or National Park Service employee for treatment of traumatic injury sustained while in the performance of duty, should not render treatment on account of the Federal Government without first receiving written authority from some project official in the form of Special Form CA-16, Special Form CA-17, or some written notation citing the nature of the injury for which treatment is requested. This, of course, does not mean to apply to cases of extreme emergency, but

OBITUARIES

DOCTOR JOHN D. LEONARD

Dr. John D. Leonard died at his home in Wagoner, Okla., April 24, 1937.

Dr. Leonard was born at Bristol, Va., in 1884. He graduated from the University of Chattanooga, Class of 1909, coming to Oklahoma shortly after graduation.

Locating in the eastern part of the state, he served as full time health officer in Muskogee county for three years, removing to Wagoner where he lived for eleven years before his death.

Dr. Leonard served overseas during the World war with rank of first lieutenant.

He married Miss Margaret Smith of Bristol, Tenn., in 1909. His wife and one son, John, survive him.

where treatment is rendered on cases of extreme emergency, written authority should be furnished the attending physician as soon thereafter as possible.

It is also requested that physicians who have rendered medical service for traumatic injuries on account of the Federal Government and who have not received payment for these services within sixty days from the date that voucher form S-69 has been submitted, or where voucher form S-69 has not been submitted on cases discharged from treatment, that if the attending physician will notify the State Compensation Officer, Mr. Hamilton Bewley, 431 West Main Street, Oklahoma City, Oklahoma, or immediately contact the District Compensation Officer, an investigation will be made and the doctor will be advised as to the status of his claim for services.

TRANSACTIONS OF THE FORTY-FIFTH ANNUAL SESSION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, MAY 10, 11, 12, 1937.

THE COUNCIL

May 10, 1937, 3 P. M.

Regular meeting of the Council called to order by the President-Elect, Dr. Sam A. McKeel, with the following members present: Doctors Aisenstadt, Fulton, Howard, Kuyrkendall, McKeel, McNeill, Risser, Speed, Templin, Walker and Willour.

On motion of Dr. Fulton, seconded by Dr. Howard, the Council went into executive session.

Minutes of meetings of the Council of February 1, 1937, April 5, 1937, and April 27, 1937, were read, and on motion of Dr. Kuyrkendall, seconded by Dr. Aisenstadt, were adopted.

It was reported by the Secretary that \$500.00 from the General Fund had been sent to the Legislative Committee about three weeks ago and on motion of Dr. Speed, seconded by Dr. Howard, this expenditure was approved.

A few days ago, on solicitation of members of the Council, \$1,000.00 was sent to the Legislative Committee for expenditure in Oklahoma City and on motion of Dr. Howard, seconded by Dr. McNeill, this expenditure was approved, and Dr. Willour's report was approved.

The Secretary then presented the statement of the receipts and expenditures of the Legislative Fund and on motion of Dr. Willour, seconded by Dr. Walker, this statement was referred to the Auditing Committee, composed of Dr. Kuyrkendall, chairman, and Dr. Aisenstadt and Dr. McNeill, and motion made and carried that the report of this committee be made a part of these minutes. The report follows:

To The Council of the Oklahoma State Medical Association: We, your Auditing Committee, appointed by the Acting President, have examined the report of the Secretary-Treasurer as audited by Mr. J. K. Pemberton of McAlester and find the accounts in order and recommend its approval by the Council.
May 10, 1937

L. C. Kuyrkendall, Chairman,
E. Albert Aisenstadt,
Philip M. McNeill."

Dr. Kuyrkendall then presented the case of the LeFlore County Medical Society vs. Drs. S. D. Beville and Neeson Rolle, in which the doctors had given notice of appeal to the Council relative to action of the County Medical Society against them. Drs. Beville and Rolle were called throughout the

Corridors of the sixteenth floor to appear before the Council and Dr. McNeill, after careful search, found it impossible to locate these gentlemen.

Dr. Shippey, Secretary of LeFlore County Medical Society, was then introduced by Dr. Kuyrkendall and presented a one-fourth page advertisement appearing in a local paper of that county, under date of April 2, 1937, with reference to solicitation of members. He also presented the minutes of the County Medical Society meeting at which time the doctors were expelled. After careful consideration by the Council motion was made by Dr. Walker, seconded by Dr. Fulton, that the action of the LeFlore County Medical Society be sustained by the Council. Carried unanimously.

At this time a statement was made by the Secretary as to the financial condition of the Association, and there followed a thorough discussion by all members of the Council as to finances for the ensuing year. It was of such length that it is impracticable to publish in the minutes.

The question of an assessment was brought up, and it was decided that an assessment could not be made without a referendum. After the discussion a motion was made that a Committee of three be appointed to formulate a plan for financing the Association for the ensuing year. This committee to be composed of Drs. Howard, McNeill and Fulton. This motion carried.

This committee was asked to report back to the Council at its next meeting.

Dr. Fulton was then appointed on motion of Dr. Walker, seconded by Dr. Speed, to make the report of the House of Delegates at its first meeting.

It was the consensus of opinion that the bonds which had been hypothecated should not be sold, but should be redeemed as soon as the financial condition of the Association made such action possible.

The Council then heard a resolution presented by Dr. McNeill relative to endorsement of the Association to have Hospital Insurance. This was adopted and recommended that it be referred to the Resolutions Committee of the House of Delegates.

On motion of Dr. McNeill, seconded by Dr. Kuyrkendall, the Council adjourned.

L. S. WILLOUR, Secretary.

COUNCIL MEETING

May 11, 1937, 1:30 P. M.

Meeting called to order by the President-Elect, Dr. Sam A. McKeel, with the following members present: Doctors Osborn, Speed, Fulton, Aisenstadt, Templin, McKeel, Walker, Tisdal and Willour.

The business of this meeting was to discuss a plan for financing the Association and carrying the expense of both the Association and Legislative Committee through another year. Suggestions for borrowing more money and plans for paying back that already borrowed for furtherance of legislative programs were discussed. After much discussion a motion was made, seconded and carried, for the Council to convene in Oklahoma City, May 23rd, at which time all matters of importance would be discussed and a plan for financing all business would be decided on.

The following amendment was made in the form of a motion "THAT the Finance Committee (named at the meeting of the Council, May 10, 1937, 3 P. M.) be empowered to act for the Council in authorizing the Secretary-Treasurer of the Association to borrow sufficient money as may be necessary for carrying on the affairs of the Asso-

ciation." Amendment by Dr. Aisenstadt, seconded by Dr. Speed, carried unanimously.

Motion made and carried that Dr. Osborn grant an interview to members of the press relative to the work of the Legislative Committee.

The following motion was made by Dr. Fulton, seconded by Dr. Speed, and carried:

"THAT Mr. Jess Harper's services be continued through the year, or until further action of the Council."

SUGGESTIONS:

THAT Mr. Jess Harper should write letters placing himself at the disposal of the County Societies, for appearance before them, or giving them any information they desired.

THAT each Councilor should make every effort possible to organize Auxiliaries in each County Society.

Dr. V. C. Tisday, Elk City, was appointed by the President to fill the unexpired term of Dr. H. K. Speed, as Councilor to District No. 2.

There being no further business the Council adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES

May 10, 1937.

Meeting called to order by the President-Elect, Dr. Sam McKeel, in the absence of the President, Dr. George R. Osborn.

First order of business was the reading of the minutes but since these had been published in the April Journal of last year, motion was made, seconded and carried that this be dispensed with.

The Chair then called for a report from the Council to the House of Delegates, which was presented by Dr. Fulton and is as follows:

"You will recall a year ago we talked it among ourselves and put it in the hands of the of the Legislative Committee to put over some legislation. We had a very fine committee composed of Drs. Speed, McLain Rogers and Barker. Drs. Speed and Rogers have been very active in this work but it was impossible for Dr. Barker to participate in these activities on account of the condition of his health. This committee had introduced and passed a Basic Science Law. They knew at the time it was going to take considerable money to put this legislation over, but the understanding was that no questions were to be asked as to the expense. They put this thing over and I know it cost plenty of money, but if you ask me how it was spent I can only say I know nothing about it.

"It was understood a year ago that this committee should have a free hand; we expected them to put over the Basic Science Law and they did it. There was another bill, Senate Bill 283, that had some vicious provisions in it that we were able to hold up in the Senate; there was also another bill that would have reduced our Medical Board to four members, one regular, one physio-medic, one homeopath, and one eclectic, thus leaving us in the minority. All of these vicious measures we have been able to defeat, however, in order to do this it was necessary to sacrifice our Registration Law. We appeal to you, for the welfare of the Association and medical profession of Oklahoma, to take this report and at this time raise no question as to the exact procedure."

On the motion of Dr. Fulton, duly seconded, this report was adopted.

Copies of the Annual Report of the Secretary-Treasurer-Editor were distributed and on motion, duly seconded, the report was accepted.

The President, Dr. Osborn, having appeared, called attention to the Committee Reports that had been published in the April issue of The Journal of last year, and asked that other reports be presented at the Tuesday morning meeting, for any discussion necessary.

He next appointed a Resolutions Committee, consisting of Drs. Phil McNeill, Paul Champlin and Shade Neeley. This committee to make their report at the Tuesday meeting.

A year ago there was an amendment to the Constitution amending Article 9, with regard to officers, and is as follows:

Section 1. The officers of this Association shall be a President, President-Elect, Secretary - Treasurer - Editor, Councilors, Speaker and Vice-Speaker.

Section 2. The Officers, except the Councilors, Secretary-Treasurer-Editor, Speaker, and Vice-Speaker of the House of Delegates, shall be elected each year. The terms of the Councilors, Secretary-Treasurer-Editor, Speaker and Vice-Speaker of the House of Delegates shall be for three years.

The amendment to the By-Laws, Chapter 5, relative to the duties of these officers follows:

Section 1. Should be amended to delete that portion reading "The President shall preside at all meetings of the House of Delegates."

Additional Section, Chapter V:

"It shall be the duty of the Speaker of the House of Delegates to preside at all meetings of the House of Delegates, and appoint all committees of the House of Delegates. The VICE-SPEAKER shall perform the above duties in the absence of the Speaker."

After some discussion of this amendment it was moved by Dr. Larrabee, seconded by Dr. Fulton, that the amendment be adopted. Carried unanimously.

Dr. Fulton then proceeded to make a speech to nominate someone as Speaker of the House of Delegates. He was ruled out of order by the President, as elections were to be held at the Tuesday meeting.

There being no further business the House adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES

May 11, 1937, 8 A. M.

The first order of business was roll call by Dr. W. A. Howard who reported sixty-six members present and voting.

All resolutions were then referred to the committee and nominations for President-Elect were called for.

On motion of Dr. Walker, Shawnee, the name of Dr. O. E. Templin, Alva, was presented, seconded by Dr. Adams, Hobart.

Dr. Osborn, Frederick, then presented the name of Dr. H. K. Speed, Sayre, which was seconded by Dr. Tisdal, Elk City.

On motion of Dr. Reed, Oklahoma City, the nominations were closed and the President, Dr. McKeel, appointed Drs. Ewing, Muskogee, and Bondurant, Oklahoma City, as tellers. The vote by ballot showed fifty-three votes for Dr. Speed and fourteen for Dr. Templin. On motion of Dr. Walker, seconded by Dr. Fulton, the Secretary was instructed to cast the entire vote of the House for Dr. Speed as President-Elect.

The next order of business was the election of a Speaker of the House and Dr. Fulton, receiving recognition of the Chair, asked permission to continue his speech of the night before, and placed the name of Dr. Horace Reed for this office. The motion was seconded by Dr. Walker.

Dr. Johnson, Pauls Valley, then presented the name of Dr. Osborn, Frederick, for consideration as Speaker of the House of Delegates.

Dr. Reed, first nominee, upon receiving recognition, in a few very well chosen words requested that his name be withdrawn, as he is already an officer of the Association, Delegate to the American Medical Association, and Dr. Fulton agreed to withdraw his name.

Dr. Reed made a motion that the nominations close and the Secretary was instructed to cast the entire ballot for Dr. Osborn as Speaker of the House of Delegates. Seconded by Dr. Bondurant, carried unanimously.

Dr. Glismann, Okmulgee, had tried to present the name of Dr. P. P. Nesbitt for Speaker of the House, but the Chair ruled him out of order as there was a motion before the House.

On a rising vote of thirty-six to twenty-two, the Secretary cast the ballot for Dr. Osborn as Speaker of the House.

The President then called for nominations for Vice-Speaker of the House, and Dr. Cook, Tulsa, then presented the name of Dr. Nesbitt for Vice-Speaker. On motion of Dr. Glismann, seconded by Dr. Bondurant, the nominations closed and the Secretary instructed to cast the ballot for Dr. Nesbitt as Vice-Speaker which he did.

Nominations for Councilor for the First District were then called for and the name of Dr. Templin, Alva, was presented by the Delegates of that district and he was unanimously elected to succeed himself.

Nominations for Delegate to the American Medical Association were then called for and Dr. Ewing presented the name of Dr. McLain Rogers, Clinton, to succeed himself. On motion, duly seconded, carried, the Secretary was instructed to cast the ballot for Dr. Rogers as Delegate to the American Medical Association.

The next order of business was the selection of an Annual Meeting place for 1938, and Dr. Ewing extended an invitation from the Muskogee County Medical Society for the State Meeting to be held in Muskogee.

Dr. Dale Collins, said that Oklahoma City would be available for the 1938 meeting should the House of Delegates decide to meet there.

Dr. Ewing made motion that Muskogee be designated as the meeting place for 1938. This was seconded and carried unanimously.

Dr. Osborn then informed the House of Delegates that the vacancy in the Council caused by the election of Dr. Speed would be filled by appointment of the President.

Next was presented the report of the Necrology Committee, which follows:

RESOLUTIONS—NECROLOGY COMMITTEE

We, the committee appointed by the President of the Oklahoma State Medical Association, beg to submit the following:

WHEREAS, since the Annual Meeting held in Enid, May, 1936, many members of the Association have passed to their reward, and realizing that "death may be nothing more than opening a door through which men pass away, as stars into the day," and not looking on death as a horrible climax to our tired and worn bodies, but rather a peaceful sleep, causes us to reflect on the words of Sir Frederick Hosmer.

I cannot think of them as dead,
Who walks with me no more
Along the path of life I tread—
They have but gone before.

And still their silent ministry
Within my heart hath place
As when on earth they walked with me,
And met me face to face.

Their lives are made forever mine.
What they to me have been
Has left henceforth its sign and seal
Engraven deep within.

Mine are they by an ownership
Nor time nor death can free;
For God hath given to Love to keep
Its own eternally.

THEREFORE, be it resolved that this Association hold in revered memory these physicians who have labored among us, and that it is with a feeling of deepest regret we mourn their passing, and

BE IT FURTHER RESOLVED, that this resolution be spread on the minutes of the meeting of the Association, and that a copy be sent to the families of the following deceased members.

Respectfully submitted,

Robert M. Anderson, Chairman,
Jas. L. Shuler,
Will C. Wait.

* * *

DEATHS

Oklahoma State Medical Association Since
February, 1936.

Ambrister, J. C., Chickasha
Armstrong, D., Durant
Bishop, Jos. Patterson, Aline
Blair, Samuel, Apache
Breco, David, Ada
Brightwell, Gaines, Leedey
Chase, A. B., Oklahoma City
Chambers, M. E., Vinson
Cunningham, Samuel R., Oklahoma City
Dodson, W. O., Willow
Dunham, Howard C., Sulphur
Dawson, Bascomb B., Ada
Edwards, R. T., Oklahoma City
Echols, J. W., McAlester
Gregory, M. S., Oklahoma City
Harris, Chas. T., Kiowa
Herrod, Reuben Taylor, Oktaha
Hayes W. F., Claremore
House, Chas. Fleetwood, Walters
Hawkins, Jas. Clinton, Blackwell
Haynie, W. D., Kingston
Heitzman, Chas. W., Muskogee
Huckabay, C. R., Idabel

Hudson, W. K., Hartshorne
 Johnson, H. C., Antlers
 Jacobs, J. C., Miami
 Keller, G. F., Oklahoma City
 Kiebler, W. G., Enid
 Linzy, J. H., Comanche
 Lloyd, H. C., Hobart
 Long, D., Duncan
 McInnis, A. L., Enid
 Miller, John Sinclair, Hugo
 Muzzy, Wm. J., El Reno
 Neer, Chas. S., Vinita
 Nunnery, A. W., Chickasha
 Palmer, T. D., Elk City
 Perry, M. L., Tulsa
 Pinnell, General, Miami
 Robinson, J. C., Okmulgee
 Ruhl, A. M., Edmond
 Sands, A. J., Choctaw
 Shackelford, Theron T., Haskell
 Sosbee, John W., Stroud
 Stone, DeWitt, Sayre
 Todd, H. Coulter, Oklahoma City
 Wagner, Howard Alonzo, Shawnee
 Winter, J. D., Wynnewood
 Walker, J. E., Shawnee
 Watson, W. S., Okmulgee
 Weedn, Alva James, Duncan
 Watson, J. W., Ryan

* * *

On motion of Dr. Walker, seconded by Dr. Shuler, the House of Delegates stood in silence in reverence to honor our dead.

The Presiding Officer then called for nominations for honorary membership and the following were nominated from their respective Medical Societies and were elected to honorary membership. Drs. J. A. Jester, Elk City; P. L. Cain, Albany; C. E. Wann, Calera; C. S. Bobo, Norman, H. P. Wilson, Wynnewood; Wm. McIlwain, Lone Wolf; J. M. Ritter, Roosevelt; E. O. Barker, Guthrie; W. P. Hailey, Haileyville; McClelland Wilson, McAlester; S. M. Richey, Tulsa; W. H. Freeman, Hobart; J. W. Harms, Cordell; J. P. Jones, Dill City.

Dr. Aisenstadt made the following motion: "That hereafter all members presented for honorary membership in this Society, to be considered, will have to have their names presented in writing, signed by the Secretary of their respective County Society before they can be considered for honorary membership, and that these names be in the hands of the State Secretary at least thirty days before the Annual Meeting."

The motion, duly seconded, was adopted.

On motion of Dr. Reed, duly seconded, the Secretary was instructed to forward list of these honorary members to the Secretary of the A. M. A. for consideration as to their eligibility, for honorary membership in the A. M. A. Motion carried.

The report of the Resolutions Committee was called for and Dr. McNeill, the Chairman, read the following report:

RESOLUTION

WHEREAS, the public has come to recognize the necessity of competent hospital care in cases of illness or accident, and

WHEREAS, people in all walks of life can only be assured of adequate hospital service in case of illness or accident through some form of hospitalization insurance, and

WHEREAS, the plan of group hospitalization is becoming universally accepted and approved throughout the country, and

WHEREAS, the regular physician or surgeon is

always desirous of having his patient provided with competent hospital facilities when necessary,

NOW THEREFORE BE IT RESOLVED that the Council of the Oklahoma State Medical Association urge the House of Delegates of the Oklahoma State Medical Association to

FIRST: Endorse the plan of insurance offered by any duly licensed insurance company in the State of Oklahoma which provides for the liquidation of reasonable expense incurred by any policy holder during hospitalization, provided the terms of the contract of the policy are not contrary to the laws of the State of Oklahoma; provided the terms of the contract of the policy in no way furnish medical or surgical attention, which includes clinical pathology, roentgenology and anesthesia, and if hospitals regularly employ pathologists, roentgenologists and anesthetists there shall be no reduction in regular rates charged for such services in that locality; and provided further that any person may have his choice of his physician or surgeon, or hospital.

SECOND: Establish a board of three members of the Oklahoma State Medical Association to be known as the Hospital Insurance Board, whose duties shall be to investigate the rates, plans, compliance with the insurance laws of the State of Oklahoma, the record of payment of claims and conduct of the policies of the company with relation to the medical profession and report the results of the investigation and findings, together with any recommendations, to the secretaries of the County Medical Societies in the counties of the State of Oklahoma. Members of said Board shall be appointed for three years in the manner of all standing committees as provided by the Constitution and By-Laws; the first member to serve for three years, the second for two years and the third for one year and thereafter for a three year term; and shall be confirmed by the action of the Council of the Oklahoma State Medical Association."

On motion of Dr. McNeill, seconded by Dr. Ewing, the above motion carried.

* * *

RESOLUTION

Adopted by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, February, 1937:

WHEREAS, The eyes and the sight of the school child are of the most vital importance for satisfactory school work, and their preservation for future health and efficiency depends upon their wise conservation during childhood; and

WHEREAS, The school has a grave responsibility for the conservation of eyesight among school children, and

WHEREAS, School administrators in many parts of the United States are frequently besieged with demands for admission into their school systems of eye examinations and eye-glass prescriptions by practitioners other than qualified doctors of medicine, and

WHEREAS, The eye, as an organ of vital necessity, requires careful conservation and deserves treatment only at the hands of trained and competent persons, and

WHEREAS, Teachers and nurses properly may and often do make rough tests of visual acuity in the classroom, but diagnosis of diseases of the eye and of disturbances of vision requires more extensive examination and often involves treatment other than the mere fitting of glasses, and

WHEREAS, Even the fitting of glasses often re-

quires the paralysis of accommodation through the use of drugs popularly known as "drops," now therefore be it

RESOLVED, That it is the sense of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, in meeting assembled at New Orleans, February 23, 1937, that the safety of the eyes of school children, the adequate diagnosis of disease and the correct fitting of glasses require examination of children's eyes (beyond rough visual tests performed by teachers or nurses) by a licensed doctor of medicine, and upon his recommendation, by a medical specialist in diseases of the eye, properly known as an oculist or ophthalmologist.

On motion of Dr. McNeill, seconded by Dr. Puckett, the above resolution was adopted.

* * *

RESOLUTION

WHEREAS, The Committee on Post Graduate Medical Teaching requests the House of Delegates for authority to represent the State Association in requesting financial aid from the Commonwealth Fund of New York City in carrying on Post Graduate Medical Instruction in Oklahoma, and appropriating \$2,000.00 from the Treasury of the State Association for cooperation and furtherance of this work.

THEREFORE, BE IT RESOLVED That the House of Delegates vote favorably upon this request.

Henry H. Turner, Chairman.

On motion duly seconded the above resolution was adopted.

* * *

RESOLUTION

WHEREAS, The Oklahoma County Medical Association has invited the Southern Medical Association to meet in Oklahoma City in 1938.

THEREFORE BE IT RESOLVED that the Oklahoma State Medical Association most heartily endorse and join the Oklahoma County Medical Association in this invitation, and urge its acceptance by the Council of the Southern Medical Association.

Signed: Henry H. Turner.

On motion of Dr. McNeill, seconded by Dr. Neely, the above was adopted.

* * *

RESOLUTION

"We commend Governor E. W. Marland and the Sixteenth Legislature for the enactment of the Highway Safety Law.

"We approve the Governor's selection of a director, and we urge all citizens to support the organization of this new department so that it may function with highest efficiency, with its personnel selected and retained on a strictly merit basis."

On motion, duly seconded, the above was adopted.

* * *

RESOLUTION

WHEREAS, The Oklahoma State Medical Association has, during the past year, secured the services of Mr. J. B. Harper of Tahleah, and

WHEREAS, This splendid man has ceaselessly and tirelessly worked for the interests of the Oklahoma State Medical Association, and

WHEREAS, This organization is appreciative of these efforts,

NOW BE IT RESOLVED That the House of Delegates of the Oklahoma State Medical Association in session assembled at Tulsa, Oklahoma, May

11th, hereby extend a vote of thanks to Mr. J. B. Harper.

On motion, duly seconded, the above was adopted.

* * *

RESOLUTION

WHEREAS, The Oklahoma State Medical Association has been represented in the House of Representatives and Senate of the State of Oklahoma by two members of this Association, and

WHEREAS, These two members have tirelessly worked for legislation sponsored by this organization,

NOW BE IT RESOLVED, That the House of Delegates of the Oklahoma State Medical Association in session assembled at Tulsa, Oklahoma, May 11, 1937, hereby commends and extends a vote of confidence to Drs. Louis Ritzhaupt of Guthrie and J. A. Morrow of Sallisaw, and a copy of this resolution be sent these two members and be included in the minutes of this body.

On motion, duly seconded, the above was adopted.

* * *

Dr. Willour then presented Dr. S. J. Wolfermann of Ft. Smith, President-Elect of the Arkansas Medical Society, and Fraternal Delegate. Dr. Wolfermann responded with the following remarks:

"Gentlemen:

"I am not going to make any particular speech. I just want you to know I consider it a pleasure and privilege to be here. I consider it an honor to bring you the greetings of the Arkansas State Society. After all, we are just one of a group of medical societies; we have lots of trouble. We always have in the past. I believe that with the motion that was just introduced, the same old story holds good there. If you get all ethical men to constantly, firmly and fairly stand together, you won't have any trouble with it. Now, with that I leave you to your work. I do want to say to you again that Arkansas extends to you very pleasant wishes, a joyful and profitable meeting, and I hope that each and everyone will carry home something worth while. I am glad to be here."

Mr. Jess Harper, Executive Secretary of the Committee on Public Policy and Legislation, was then presented to the House of Delegates and in a few remarks expressed his appreciation of his association with the organized medical profession of Oklahoma. He paid our Legislative Committee a much deserved compliment as well as complimenting the work in the Legislature of Representative Morrow and Senator Ritzhaupt.

The President then spoke as to Mr. Harper's work, expressing his sincere appreciation of the high, ethical and gentlemanly manner in which he had conducted his work.

Dr. Neely then presented the following resolutions:

WHEREAS, The members of the Legislative Committee of the Oklahoma State Medical Association have expended many hours of untiring effort in behalf of medical legislation at a very great sacrifice of their own personal time and means, and

WHEREAS, They were successful in having adopted a great part of the legislative program of the Oklahoma State Medical Association, now

THEREFORE, BE IT RESOLVED, That the House of Delegates of the Oklahoma State Medical Association extend to the Legislative Committee, Drs. C. B. Barker, McLain Rogers, and H. K. Speed, their vote of confidence and thanks of this body, and

BE IT FURTHER RESOLVED, That a copy of this resolution be spread upon the minutes of this Society and a copy be sent to each of the above named committee.

On motion, duly seconded, the above resolution was adopted.

* * *

RESOLUTION

WHEREAS, The Oklahoma State Medical Association has been well guided during the year 1937, through the efforts of our Legislative Committee, and

WHEREAS, This committee has one physician on it who has been so enthusiastic about legislation sponsored by this association, driving his own car for thousands of miles, neglecting his own practice for a considerable length of time and making many supreme sacrifices for the benefit of the Oklahoma State Medical Association,

NOW THEREFORE BE IT RESOLVED, First, that the House of Delegates of the Oklahoma State Medical Association in session assembled this 10th day of May, 1937, hereby goes on record as appreciative of the splendid work of DOCTOR McLAIN ROGERS. Second, the House of Delegates wishes to bestow upon Dr. McLain Rogers a life membership in the Oklahoma State Medical Association. Third, that a copy of this resolution be sent to Dr. McLain Rogers and this resolution shall be included in the minutes of this body.

Respectfully submitted,

MUSKOGEE COUNTY MEDICAL SOCIETY.

W. R. Joblin, President,
Shade D. Neely, Secretary.

Resolution introduced and passed in the Muskogee County Medical Society at its regular session, April 9, 1937. Instructions to delegates to introduce this resolution at House of Delegates of Oklahoma State Medical Association in Tulsa, May, 1937.

W. R. Joblin, President,
Shade D. Neely, Secretary.

The above resolution, on motion, duly seconded, was adopted.

* * *

RESOLUTION

WHEREAS, The Muskogee County Medical Society, on December 7, 1936, in regular session went on record as favoring the Bobst plan as outlined in the Hoffman-LaRoche monthly periodical of December, 1936, and

WHEREAS, This plan is roughly as follows: "That ethical pharmaceutical houses make donations totaling \$400,000.00, this money donated to the American Medical Association without strings or reservations for the purposes of advertising possibly by radio on a nation-wide hook-up; that the names of these pharmaceutical houses never be mentioned or made known publicly in any advertising directly or indirectly; that this \$400,000.00 be used annually; that a committee be formed by the American Medical Association and from among the pharmaceutical houses to work this plan out, and

WHEREAS, This County Medical Society believes that this is one of the best plans for informing the public which has been suggested, and that the American Medical Association should match dollar for dollar monies donated by these pharmaceutical houses,

NOW THEREFORE BE IT RESOLVED, By the Muskogee County Medical Society in regular session, this, the 19th day of April, 1937, that it specifically instructs its Delegates to the Oklahoma State Medical Association which meets in May, 1937, at Tulsa, Oklahoma, to present this plan be-

fore this House of Delegates and suggests that this House of Delegates instruct their Delegates to the American Medical Association to introduce this resolution in the House of Delegates of the American Medical Association, that they themselves become fully acquainted with this plan, and use their influence and support for this plan or some other better one for such a worthy undertaking.

Resolution offered April 19, 1937, by S. D. Neely, seconded by R. N. Holcombe, discussion, carried without dissenting vote.

W. R. Joblin, President,
Shade D. Neely, Secretary.

Resolution adopted.

* * *

RESOLUTION

BE IT RESOLVED By the Muskogee County Medical Society in regular session, April 19, 1937, that it approves and urges the passage of an act by the proper authorities within the American Medical Association establishing

- 1st: A National Medical Social Security Association. Its purpose being the protection of the aged and infirm members within the American Medical Association, and
- 2nd: A National Medical Protective Association for the benefit of the members of the American Medical Association, and

BE IT FURTHER RESOLVED, That the Delegates from this Society be instructed to present this resolution to the Oklahoma State Medical Association on May 11, 1937, and urge its adoption by them at that time. And, further, that the Delegates from the State Association to the American Medical Association meeting in June, 1937, be directed to present this resolution to that body and urge its adoption there.

On motion, duly seconded, the above was adopted.

* * *

Dr. Speed then introduced Mr. Clearman, who addressed the House of Delegates on legislative matters, making a very interesting and instructive talk.

The subject of fixation of fees for work done for clients of the Resettlement Administration was then presented by Drs. McNeill, Speed and Reed. After considerable discussion the following motion was presented:

"That the fee schedule, as adopted by the Council at a meeting in Oklahoma City, November 8, 1936, be rescinded, but that doctors in County Societies may feel at liberty to deal with the Resettlement Administration as they see fit."

The motion was seconded and carried unanimously.

On motion, duly seconded, the House of Delegates adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

—○—

Report of Committee on Study and Control of Tuberculosis

The high death rate from tuberculosis in Oklahoma, the 1936 records showing considerable increase over 1935, indicates a need for more attention to this disease by the medical profession. The rate in Oklahoma has heretofore been lower than for the United States as a whole, but the 1936 figures put this state at about the average of the country in 1935; if the rate for the United States in 1936 shows the usual reduction Oklahoma may find its rate above the national average.

We believe one of the reasons for this poor showing has been that with a low tuberculosis rate, as compared to the rest of the country, physicians have not been as tuberculosis conscious as they should be. Diagnosis is too often made after disease is advanced. Admissions to the sanatoria in the minimal stage are not the rule.

We urge physicians to give consideration to the possibility of tuberculosis wherever there is the remotest chance that it may exist. We urge the use of all modern methods of diagnosis when there appears the need to search for obscure causes of illness. We recommend the proper use of the tuberculin test and x-ray, especially in children and young people, as a means of ferreting out tuberculosis before harm is done; and that these weapons be used in searching for carriers who are responsible for so much of the disease.

An aid to the tuberculosis situation the past year was the post-graduate course on tuberculosis held in Tulsa on September 29, 1936. An attendance of ninety physicians indicated a genuine interest in the care and treatment of tuberculosis. The response to this course leads to the conclusion that a similar program should be conducted each year.

Carl Puckett, Chairman,
F. S. Etter,
F. P. Baker.

News Notes of Woman's Auxiliary

The convention of the Woman's Auxiliary to the Oklahoma State Medical Association met in Tulsa May 10th, 11th, and 12th with headquarters at the Mayo Hotel. There were one hundred seventy-three registrations at the desk on the lobby floor of the hotel. The session opened with an Executive Board meeting and luncheon at the Twin Oaks Tavern at 12 o'clock noon on Monday, May 10th, with Mrs. Chas. R. Rayburn presiding. Five out of the seven county organizations were represented. At two o'clock a Study Conference was held when there was a general discussion of auxiliary work over the state. Each auxiliary representative told what program was most successful in her county and there was a delightful interchange of ideas.

On Monday evening with Mrs. Thomas H. Davis, general chairman, the Auxiliary to the Tulsa County Medical Society entertained the visiting doctors' wives with a dinner and fashion revue at the Tulsa Club. The one hundred four present were seated at small tables decorated with spring flowers. The fashion show sponsored by Sears' was modeled by Tulsa County doctors' wives. The latest styles from beach costumes to formal evening dresses were displayed to the best advantage by the models. Mrs. E. G. Hyatt was in charge of the revue. Mrs. Frank L. Flack presented the State President, Mrs. Chas. R. Rayburn, who made a short address and this was followed by the introduction of out of town guests. Lovely favors of pressed lavender flowers were furnished by Brown-Dunkin Company. Organ music was played throughout the evening.

At ten o'clock Tuesday morning the annual business meeting was held in the Open Parlor at the Mayo. Excellent reports were given by the various county organizations. There is now a total membership of three hundred seventy-nine in seven county societies. The election of officers was held and the following officers will direct the affairs of the State Association during 1937-1938: Mrs. Hugh Perry, Tulsa, president; Mrs. Eugene Rice, Shawnee, vice-president; Mrs. Frank L. Flack, Tulsa, recording secretary; Mrs. W. S. Larrabee, Tulsa, treasurer; Mrs. N. E. Duncan, Forgan, historian;

and Mrs. Edward D. Greenberger, McAlester, parliamentarian. Mrs. George H. Garrison, Oklahoma City, was elected president-elect. At 2:00 p. m. all out of town members were taken for a ride over the city.

On Tuesday evening the Tulsa County Medical Society entertained all the doctors and their wives with a reception and dance in the Crystal ballroom at the Mayo Hotel.

Mrs. Hugh Perry, the new president, called a post-board meeting at ten o'clock Wednesday morning. Several members of the new executive board attended and Mrs. Robert E. Fitzgerald, president of the Auxiliary to the American Medical Association, and Mrs. Frank M. Haggard, president of the Auxiliary to the Southern Medical Association, attended, offering many suggestions and answering numerous questions. There was an active discussion concerning plans for the coming year. Mrs. Fitzgerald and Mrs. Haggard had arrived on a Wednesday morning train and a breakfast had been given in their honor at the Mayo.

The convention closed with a luncheon at the Tulsa Country Club. There were ninety-one present. Dr. Sam A. McKeel, Ada, the new state president, gave an address on how the auxiliary can be a help to a medical society. Mrs. Fitzgerald and Mrs. Haggard gave very interesting talks about the auxiliaries in other states. The afternoon's entertainment was concluded with a review of the play, "High Tor" by Maxwell Anderson, by James Mansfield Dinkinson. The next year's convention will be at Muskogee. Mrs. Frank L. Flack.

Hyperthyroidism Masked by Symptoms of Acute Abdominal Catastrophe

William E. Robertson, Michael G. Wohl and Harold F. Robertson, Philadelphia (Journal A. M. A., February 20, 1937), consider instances in which the acute symptoms and signs referable to the abdomen are due entirely to the overactivity of the thyroid. The symptoms referable to the abdomen may be so severe as to suggest a surgical catastrophe. In two of three such cases the abdominal signs mimicked acute appendicitis. One of these patients was operated on and a normal appendix was found. The pains in the third patient were localized in the left upper quadrant of the abdomen. Postmortem examination showed no abdominal pathologic condition to account for the pains. Differentiation is not always possible since hyperthyroid patients may harbor lesions of the gastro-intestinal tract. When appropriate therapy is applied, the abdominal symptoms disappear with other signs of hyperthyroidism. In the surgical cases the signs and symptoms usually progress.

Torulosis in Man

Early surgical removal of a circumscribed area of torulosis seems as logical to Kenneth W. Taber, Pasadena, Calif. (Journal A. M. A., April 24, 1937), as the early removal of carcinoma. Surgery is not indicated in torulosis of the central nervous system or in generalized pulmonary torulosis—such as in the case that he reports—any more than surgery would be indicated in generalized carcinomatosis. The removal of a localized lesion either with the cautery or with the radio knife may well be considered as the treatment of choice. Whether the occasional pathogenesis of torulae depends on occasional variations in their own virulence, on the hypersensitivity, or on the lowered resistance of the persons affected is not yet proved. But it would appear from the facts in hand that both factors play a part.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Paget's Disease of the Eyelid Associated With Carcinoma. Dr. A. Hagedoorn, University Eye Hospital, Amsterdam. *The British Journal of Ophthalmology*, May, 1937.

The case reported is that of a woman, age fifty-six, with a chief complaint of severe pain in the left eye. She gave a history of trachoma and treatments since childhood. The left tarsus and the right lacrimal sac had been previously extirpated. She had had previous attacks of iritis in the left eye.

At this time the left eye had a blepharitis, dacryocystitis and a thick viscous secretion. The conjunctiva was thick and red, and appeared "greasy." The cornea was irregular and had a dense old pannus. She had light perception; tension normal. An extirpation of the sac was done and followed with conservative treatment.

Two years later the eye was excised with the posterior part of the lids and the conjunctival sac in order to make the socket suitable for an artificial eye. Histological examinations were made of sections obtained from this material. These showed a xerosis of the conjunctiva due to the chronic trachoma. Changes in the normal anatomy are described which included obliteration of glands and the presence of an occasional cyst. Inflammatory changes showed infiltration with lymphocytes and plasma cells especially under the xerotic epithelium.

Interesting anomalies of a blastomatous nature are described at length and in detail. Six different sections are reproduced, microphotograph. After a discussion of these it is noted that at this time carcinoma seemed probable.

A year later a small tumour occurred under the upper eyelid. Carcinoma was confirmed by this recurrence. Exenteration of the orbit was done. No other primary malignant tumour or metastasis was discovered. Histological examination of sections was done.

The author says: "This carcinoma is interesting on account of its being associated with lesions often called pre-carcinomatous, not described hitherto in ophthalmology. The fact that the pathological condition of the epithelium is generally restricted to the deeper layers, the absence of dyskeratosis, akantosis and hyaline degeneration, the Meibomian and sebaceous glands are in favour of the diagnosis 'Paget's disease.'"

There was present here some features resembling Bowen's disease.

Septic Thrombo-Phlebitis of the Lateral Sinus With Metastases. Calhoun McDougall, M.D., F.A.C.S., Atlanta, Ga. *The Eye, Ear, Nose and Throat Monthly*, May, 1937.

The author reports three cases of septic thrombo-phlebitis of the lateral sinus with pyemic metas-

tases in the joints, in children that recovered following operation.

Otological literature of the past ten years shows thirty cases of lateral sinus thrombosis with joint and muscle metastases. There were three mortalities.

Fifty per cent mortality is the estimate in all cases of sinus thrombosis, where all cases are considered alike, without regard to time of operation, type of infecting organism, or secondary infection.

The formation of the thrombosis is discussed as is also the different types of thrombosis, i.e., the obliterating thrombus and the mural or parietal thrombus.

The diagnosis is not always easy because the large proportion of the cases do not follow a typical course. Double mastoiditis in children presents the greatest difficulty. Different diagnostic points are discussed.

Symptoms are variable but signs of septic infection such as daily range of temperature from normal to 104 or 105 degrees, chills, sweats, diminution in red cells and hemoglobin, high leucocytosis and metastatic lesions in viscera or superficial structures are some of the most common.

A form of treatment is outlined. The author's summary and conclusions are:

1. Blood cultures are of a great aid in diagnosing lateral sinus thrombosis. Over fifty per cent of the diagnosed cases show negative growth after repeated cultures. We must not put too great dependence on the result of a negative blood culture in making a diagnosis of this infection.
2. Whole blood transfusions, with properly typed donors, should be given to all septicemias with a low red blood cell count and low percentage of hemoglobin.
3. Intravenous injections of mercurochrome, 220 soluble, are a valuable therapeutic aid in septic thrombo-phlebitis when given intelligently, early, often and not in too large a dose at one time.
4. It is my observation from these cases and several others recently reported, that joint and muscle metastases occur mostly in children and where they exist as a complication of septic thrombo-phlebitis of the lateral sinus, the prognosis is favorable under proper treatment. These lesions also more frequently follow sinus thrombosis from acute infections of the middle ear rather than chronic otitis.

Twenty Years' Experience With Iodine Powder (Sulzberger) in the Conservative Treatment of Aural and Nasal Suppuration. Dr. M. D. Lederman, New York. *The Laryngoscope*, February, 1937.

The author's point in regard to aural infections is that "unless active indicative symptoms of a fulminating character exist, it is our duty to em-

ploy this simple, effective, conservative treatment and avoid surgical intervention."

The time or duration of the aural infection is not one of the deciding factors in consideration of radical surgery. He cites the case of a physician with discharging ears for nearly fifty years to illustrate his contention "that with careful attention to proper preparation of the middle ear, attic, eustachian orifice and hypotympanic space, before the powder is applied, numerous instances of prolonged chronicity of middle ear involvement have remained dry, with useful hearing, notwithstanding the fact that radical surgery had been suggested by others."

Beck is quoted: "Surely we agree that even if a radical mastoid operation is performed, in many instances much remains to be desired in obtaining a cessation of the discharge and a conservation of hearing." Beck remarks further that "he has yet to see a case of chronic suppuration of the middle ear, that he has treated and continued to observe, develop any serious intracranial complications. There are always present signs and symptoms in plenty of time to warn and place indications for an operation."

Personal experiences of the writer as well as otologic literature tend to confirm Beck's opinion. In these chronic ears there is usually present a mixed infection. Vaccine therapy is not particularly indicated. The author sometimes used a non-foreign protein to stimulate resistance.

To obtain satisfactory results with this treatment there are several factors which must be considered. Preparation of the field for the powder must be thorough. This takes time as it not only includes a dry middle ear but also the surrounding areas such as the attic, eustachian tube, orifice and hypotympanic space. Any debris, accumulated secretion, cholesteatoma and granuloma must be thoroughly exenterated. Nasal and postnasal pathology must be corrected. X-rays are advisable although the local picture is of more importance, according to the author.

Ear irrigations are not used because of the moisture producing a lowered tissue resistance. Suitable cotton applicators are used to cleanse and dry the field, going through the drum perforation when possible. If the perforation is large, the result of the treatment is more rapid, because more powder can be introduced at each sitting. Using a suitable cannula or glass with the aid of gentle suction, may help in cleansing the middle ear. Care must be taken as this sometimes produces a disturbance of the vestibular labyrinth. Following the cleansing ninety-five per cent alcohol is then used. When dry the powder is insufflated into the middle ear. The amount of secretion determines the frequency of the treatments. The author says the majority of his patients receive two treatments a week.

One per cent powder is used initially and depending on the results obtained increased up to as high as ten per cent. The action of this form of medication is discussed. The importance of a dry, clean field before introduction of the powder is stressed. The author reports the use of this treatment on mastoid fistulae successfully. A few cases are reported.

Nasal infections are also treated with this powder. The author details his nasal treatment.

Vascular Adenoma of the Bronchus. A. M. Zamora and N. Schuster, London. *The Journal of Laryngology and Otology*, May, 1937.

Due to the routine bronchoscopic examinations, benign tumours of the bronchi are not considered so rare as they were in former years.

Epithelial growths (carcinoma) are the most common in this location but there is a connective tissue tumour which is not uncommon. These can be treated successfully if the diagnosis is made early enough.

There have been about twenty-five cases reported which the laryngologist and pathologist have regarded as benign adenomas of the bronchus. Doubtless others reported under a different nomenclature would fall in this group as now classified.

Symptomatically there are two groups, according to the amount of bronchial obstruction. With a slow growth the patient may be symptomless or only have a slight cough. Expecterated blood in small amounts may be present repeatedly. When obstruction of the bronchus has occurred, there may be a variety of symptoms depending on the degree and location of the growing obstruction.

Mechanically Chevalier Jackson (1930) gives three types of bronchial obstruction: stop valve (complete), by-pass valve (diminished amount of air passing in and out), and check valve (air passing in one direction only, in or out). Atelectasis or emphysema, in any degree is thereby produced, with the subsequent secondary changes. The vascularity of the adenomas make it possible for them to change rapidly from one type of obstruction to another. A variety of physical signs may be produced. Of the five cases examined two are reported in detail. Drawings and sections of the tissue are shown.

The characteristic appearance is that of a round, congested generally submucous mass. There is a freedom of movement to the end of the bronchoscope which is not so evident in malignancies.

Mechanics enter into the treatment. Entire removal of the growths is rendered more difficult by their vascularity, i.e., free bleeding. The use of radon seeds placed in and around the growth is probably the treatment of choice since this does away with the bleeding. The growth is reduced in size or obliterated entirely. Even if not entirely obliterated, but just reduced, the patient is afforded much relief from his symptoms.

A typical histological specimen is described. The characteristic vascularity may confuse one with haemangioma and endothelioma.

The prognosis is good for if the removal is effected completely there is no recurrence. There is no proper encapsulation and metastases have been recorded.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Swelling of the Arm Following Radical Mamectomy.
By James Ross Veal, New Orleans. *The Journal of the American Medical Association*, April 10, 1937, Page 1236.

The author discusses the history and the literature of the subject of post-operative odema of the arm.

"By means of the introduction of stabilized thorium dioxide into the median basilic, the basilic or the brachial vein I have found it possible to visualize the entire brachial, axillary and subclavian venous system, as well as their collateral veins. As a result, I have been able to demonstrate points of constriction of occlusion in the axillary vein and to say with a fair degree of positiveness that this vein does or does not play a part in the

production of the post-operative edema in any given case."

Upon this basis of his study he has devised a triple classification for post-operative oedema of the arm: (1) lymphatic obstruction, (2) axillary vein constriction or occlusion and (3) combined lymphatic and venous obstruction.

The various classifications are discussed and the technique of this vasography is carefully outlined. The author's summary is quoted below:

"1. Edema of the arm following radical removal of the breast may be due to lymphatic obstruction, to venous obstruction, or to a combination of the two factors. The present small series of twenty cases indicates that venous obstruction is the most common cause.

"2. Obstruction of the axillary vein is due to various causes, the chief of which are the pressure of the malignant growth itself in its primary or secondary manifestations, scar formation, and the impingement of fat folds.

"3. Constriction may occur only when the arm is dependent and may disappear when the elevation of the arm restores the patency of the vein.

"4. A collateral circulation may develop adequate to take care of the venous return.

"5. Venography with stabilized thorium dioxide is of value in determining the cause of the edema, but no procedures have yet been devised to remedy it. The wisdom of prophylaxis is therefore obvious."

The author has stressed the prophylactic measures to be employed, particularly an attempt to keep the axillary area as free from scarring as possible, and the very gentle handling of the axillary vein during operation. Wendell Long.

Technical Considerations in the Treatment of Acute Perforated Peptic Ulcer. H. P. Totten, Los Angeles, Calif. *Western Journal of Surgery, Obstetrics and Gynecology*, April, 1937, Page 194.

Acute free perforation of peptic ulcer constitutes one of the most urgent surgical emergencies. The treatment of this intra-abdominal catastrophe consists of an operation which is concerned primarily with the avoidance of a fatality. This fact takes precedence over all other considerations. In view of the fact that simple closure of the perforation is the least time consuming and least traumatizing procedure which fulfills the fundamental requirement in treatment, namely removal of the source of peritoneal contamination, it should be the procedure of choice in the hands of the average surgeon when a definite contra-indication to its employment does not exist. Simple closure tends toward a lower immediate mortality and the late results are surprisingly good.

Since the majority of ulcers which perforate into the free peritoneal cavity are located close to the pyloric ring, the surgeon is not infrequently confronted with the possibility that the infolding necessary for adequate closure of the perforation may cause complete occlusion of the pyloric outlet. In such cases the author uses a form of pyloroplasty which he describes. The intrinsic value of pyloroplasty for perforated ulcer lies in the fact that it may be quickly done upon an acutely ill patient as a life saving operation, in place of a more radical and extensive procedure, such as gastric resection, when simple closure of the perforation alone does not fulfill the surgical requirement.

The field of application for the pyloroplasty described is limited, but the indications are definite. Its use is limited to ulcer in close proximity to the pyloric ring on either the duodenal or the

stomach side. The author describes the advantages of his operation as follows:

A. Removal of pyloric obstruction if present, as well as the ulcer and surrounding scar tissue.

B. Destroys permanently the action of the pyloric sphincter by removal of the anterior one-half or more of the pyloric ring, thus relieving spasm, putting the tissue at rest and providing for permanent adequate regurgitation of duodenal contents into the stomach which is necessary for neutralization of excess gastric acidity.

C. It does not require duodenal mobilization.

D. The operation is simple, quickly performed, and is done at the site of the pathological tissue.

E. It does not disturb normal anatomical and physiological relation and eliminates the possibility of jejunal ulceration which is a distinct hazard in gastro-enterostomy.

F. By removal of all indurated scar tissue, normal tissues only are approximated at the suture line.

This procedure is a modification of the Horsley and Judd pyloroplasties and embraces those features of each which seem best adapted to the treatment of the pathological condition present. The author thinks that by substituting this procedure for simple closure, the mortality rate will be lowered in that type of case in which, due to extensive induration and friability of the tissue surrounding the perforation, there is danger of leakage at the suture line or post-operative pyloric obstruction.

His conclusions are as follows:

1. The choice of treatment for acute perforated ulcer is simple suture.

2. He describes a method of simple suture (interrupted mattress sutures rather than purse string).

3. A pyloroplasty which may be used for perforated ulcer near the pylorus is described—one which does not require duodenal mobilization. He thinks that this procedure may be used with slight risk where simple suture appears inadvisable.

4. Thorough aspiration of the peritoneal cavity with suprapubic drainage of the pelvis is considered an essential part of the operative procedure. Then post-operatively, the use of the indwelling Levine tube and adequate amounts of intravenous glucose in salt solution, contribute to a smooth convalescence. LeRoy D. Long.

Total Thyroidectomy in Angina Pectoris and Congestive Failure. Three Year Post-Operative Review of Sixteen Patients. By Morris Dinnerstein, et al. *The American Journal of Surgery*, May, 1937, Page 421.

This is a long, careful, detailed report of the study of the sixteen patients who had the operation of total thyroidectomy done. The report comes from the first medical and surgical (Columbia University) division of Bellevue Hospital in New York.

The authors conclude as follows: "Our studies to date comprising but sixteen patients who have been followed for a period from twelve to thirty-two months are offered only as material to be added to the growing mass from which ultimately conclusions regarding the essential value of total thyroidectomy for the treatment of heart disease will be drawn.

"A group of patients suffering from cardiac decompensation or angina pectoris, intractable to the usual medical measures, can be distinctly helped by total ablation of the thyroid gland. The benefit produced is sufficiently great in a large enough

proportion of cases to justify such a radical surgical procedure. Such a major operation can be carried out in patients suffering from serious heart disease with an astonishing low operative mortality rate.

"The successful outcome of any case depends first, on a very careful selection and thorough pre-operative study of the patient, and secondly, on an organization which can assure a continuous post-operative supervision and follow up. Ambulatory patients who have been subjected to total thyroidectomy for the improvement of heart disease unquestionably require more frequent and closer observation than those not operated upon because all of these patients require the administration of desiccated thyroid extract; the determination of adequate dosage demands careful and frequently repeated observation and repeated basal metabolic rate and blood cholesterol determinations.

"The operative procedure of total thyroidectomy as a means of treating angina pectoris has opened paths of approach to the study of cardiac pain and the conditions surrounding its occurrence heretofore unavailable and has enlarged and will continue to add immeasurably to our knowledge of the subject." LeRoy D. Long.

Surgery in Patients of Advanced Age. By Barney Brooks, M.D., Nashville, Tennessee. *Annals of Surgery*, April, 1937, Page 481.

This contribution is mainly made up of a series of tables showing the results of surgical operations on two hundred eighty-seven patients over seventy years of age in Vanderbilt University Hospital from 1926 to 1935. The following general headings indicate the classification, or grouping by the author, followed by the approximate operative mortality in each group:

1. Ophthalmologic operations, including cataracts, iridectomy, etc., sixty-five patients, with a mortality of one.

2. Otolaryngologic operations, including mastoidectomy, excision tumor larynx, etc., six patients, without mortality.

3. Genito-urinary operations, including various types of prostatectomy, resections, suprapubic cystostomy, etc., sixty-eight patients, with a mortality of fifteen.

4. Abdominal operations including exploratory laparotomy for inoperable cancer, gastrostomy, cancer oesophagus, gastro-enterostomy for cancer, resection of stomach, cholecystectomy, appendicectomy with drainage, etc., thirty-three patients, with a post-operative mortality of eleven.

5. Hernia operations, including radical cure ventral hernia, strangulated femoral hernia and strangulated inguinal hernia, etc., twenty patients, with a mortality of one.

6. Mammary gland operations, including radical and simple mastectomy, ten operations, without mortality.

7. Rectal operations, including hemorrhoids, fistulae, peri-rectal abscess, etc., six patients, with a mortality of one.

8. Neurologic operations, including operation on Gasserian ganglion, craniotomy, chordotomy, etc., eleven patients without mortality.

9. Operations for circulatory disease, including amputation for gangrene, operation for varicose veins, etc., eleven patients, with a post-operative mortality of two.

10. Operations for superficial neoplasms, including excision of neoplastic growths about the head

and neck, thirty-nine patients, with a post-operative mortality of one.

11. Thyroid operations, three patients, with a mortality of one.

12. Bone and joint operations, eleven patients, without mortality.

13. Incision and drainage of infections of various types, including carbuncle, five patients, with a mortality of one.

14. Gynecologic operations, three patients, with a mortality of one.

15. Chest operations, one patient, drainage lung abscess, with a mortality of one.

16. Plastic operations, one patient only, plastic for burns, without mortality.

COMMENTS

An analysis indicates a post-operative mortality of something over twelve per cent in the two hundred eighty-seven patients, but it is striking that most of the mortality occurred in certain groups. The information relative to the post-operative mortality might be roughly recapitulated as follows:

1. Ophthalmologic operations, mortality less than two per cent.

2. Otolaryngologic operations, mortality zero.

3. Genito-urinary operations, mortality approximately twenty-three per cent.

4. Abdominal operations, mortality thirty-three and one-third per cent.

5. Hernia operations, mortality five per cent.

6. Mammary gland operation, mortality zero.

7. Rectal operations, mortality about seventeen per cent.

8. Neurologic operations, mortality zero.

9. Operations for circulatory disease, mortality about eighteen per cent.

10. Operations for superficial neoplasms, mortality about two and one-half per cent.

11. Thyroid operations, mortality thirty-three and one-third per cent.

12. Bone and joint operations, mortality zero.

13. Incision and drainage of infection, mortality twenty per cent.

14. Gynecologic operations, mortality thirty-three and one-third per cent.

15. Chest operations, mortality one hundred per cent.

16. Plastic operations, mortality zero.

It is well understood that the hazards after seventy years of age frequently depend upon senile alterations, particularly in connection with cardiovascular-renal insufficiencies. The high mortality following operations in the genito-urinary group is illustrative.

While the author does not mention it, the type and the expertness of the administration of the anesthetic agent is of extreme importance in the decadent period of life. The extremely low post-operative mortality in the ophthalmologic group, where most of the operative procedures are done under local anesthesia, is strikingly significant.

It is interesting and instructive to contrast the post-operative mortality of thirty-three and one-third per cent in the abdominal operations group with the mortality of five per cent following operations for the cure of various types of herniae, and suggests in a very strong way the possibility of grave results following the trauma of the intra-abdominal contents in connection with many, if not most of intra-abdominal procedures. In the

average operation for hernia there is usually no necessity for operative trauma beyond the immediate site of the operative procedure.

LeRoy Long.

Drainage of the Abdominal Cavity in Operations for Perforated Peptic Ulcer. By Eldridge L. Eliason, M.D., and John P. North, M.D., Philadelphia, Pennsylvania. *Annals of Surgery*, April, 1937.

This is a very practical article in which the authors advocate drainage after operations for perforated peptic ulcer, and very good and sensible reasons are given for the advocacy.

Several important questions are answered in a brief, but very effective way. For example, reference is made to the oft-repeated statement that a drain in the abdominal cavity is ineffective after a few hours because of adhesions about it. The authors say, "in spite of this it is certain that a wide area of the abdomen is drained. This is especially true in the first few days after operation, when the inflammation is still marked and the voluminous exudate prevents peritoneal adhesions. Adhesions between structures surrounding the drain develop only as the inflammation is reduced in severity. At this time also comes the reduction in the area which is affected by the drain."

The authors say that statistics seem to argue against the practice of drainage, but immediately follow up this statement by the following: "It is a mistake to compare statistics. As has been stated, statistics are of value only to the man making them. Until all writers use the same language, so to speak, comparisons are inconclusive. One writer's mortality figures are based on the premise that a surgical death must happen in seven days, and be directly due to the surgical condition. If the patient dies of pneumonia three weeks later, it is not a surgical death. This diversity of time limit is known to range from forty-eight hours, entire hospital stay, days, weeks or even months. Two of our cases, for example, died on the thirty-ninth day and the forty-eighth day, respectively."

Answering the argument that the contents of the upper gastro-intestinal tract which escape through a perforation are sterile, the authors present proof that "careful bacteriologic examinations do not bear this out." In connection with that question, the common cause of disaster, namely, peritonitis, is indicated, and the authors say that "it is a condition which conceivably may be helped or prevented by drainage."

It is the practice of the authors to place a soft cigarette drain at the site of the perforation, the drain emerging through a stab puncture at a dependent point, and a similar drain is placed between the liver and the diaphragm. In addition, it is the practice of the senior author (Eliason) to place a suprapubic drain into the pelvis when there is extensive contamination.

COMMENTS

As old as the subject is, there is no more important question than that of drainage in connection with infectious processes, and processes which should be regarded as potentially infectious, within the abdominal cavity. If the careful surgeon who is honest intellectually and who has an analytical mind will go through the records of the hospital in which he works he will find, without the least difficulty, the evidences of disasters traceable to the lack of facilities for drainage. Any surgeon with his eyes open knows that it is utterly foolish to say that drainage of the abdominal cavity is not useful even for days after operative procedures where they are indicated. One very important requirement is

to remember that when a drain is placed in position it should be let alone for at least a week.

LeRoy Long.

The Evaluation of Abdominal Symptoms in the Diabetic. By Frederick A. Bothe, M.D., and Joseph T. Beardwood, Jr., M.D., Philadelphia, Pennsylvania. *Annals of Surgery*, April, 1937, Page 516.

In this article the authors direct attention to the distinction between the term diabetic acidosis and diabetic coma. Diabetic acidosis precedes diabetic coma, and abdominal symptoms are present in a large number of patients. The symptoms are nausea, vomiting, abdominal pain and tenderness, and usually fever and leukocytosis. "The same group of symptoms and clinical findings is also characteristic of an acute abdominal condition and without a careful history, urinalysis, blood sugar, and plasma CO₂ determination, a differential diagnosis of these conditions may be impossible." Attention is directed to polyuria and polydipsia as early symptoms which may exist twenty-four or forty-eight hours before the abdominal symptoms. The acidosis develops in a gradual way but the abdominal symptoms which develop later may be of sudden onset.

"The clinical appearance of patients suffering from diabetic acidosis is frequently not unlike that of acute intestinal obstruction in that they are toxic, markedly dehydrated, have abdominal distention, pain, nausea, vomiting and obstipation."

There are several case reports. The first concerns a married woman forty-four years of age who had been a known diabetic, but careless in connection with the control of the disease. She had been vomiting and suffering from obstipation for three days before coming to the hospital. For twenty-four hours there had been vague abdominal symptoms, and twelve hours before admission there was a sudden severe pain in the right upper abdomen. The temperature was 103. Leukocyte count 31,000. The tentative diagnosis in the receiving room was intestinal obstruction. There was marked dehydration. There was some tenderness and rigidity in the right upper abdomen. There was sugar in the urine, a blood sugar of 420 mg. per 100 cc. and the CO₂ was seventeen volumes per cent. There was a definite diagnosis of diabetic acidosis. Under proper management, the abdominal symptoms had disappeared six hours after admission.

Another case is that of a boy of thirteen in whose case diabetes was not suspected. There was severe sharp pain in the right lower abdomen accompanied by nausea and vomiting. Temperature 103.2. Leukocyte count 29,000. He was sent to the hospital with a diagnosis of acute appendicitis. A pre-operative urinalysis showed glycosuria. The blood sugar was 730 mg. per 100 cc. and a CO₂ of fifteen volumes per cent. The diagnosis of appendicitis was abandoned. Under proper management, there was a rapid disappearance of fever, leukocytosis and abdominal symptoms.

The following case, reported by the authors, is illustrative of the necessity of proper investigation. A man seventy-two years of age had had mild diabetes for some years, but it troubled him very little. He came to the hospital with a history of abdominal pain and constipation for three days. The pain had been worse during the last twenty-four hours, and there had been vomiting. There was great distention of the abdomen. It was believed that there was an intestinal obstruction and an emergency operation was performed. No obstruction was found. The next morning the blood sugar was 373 mg. and CO₂ was twelve volumes

per cent. He died six hours later of diabetic acidosis.

The authors make the statement that there is no satisfactory explanation for the abdominal symptoms in diabetic acidosis. They make the statement, too, that the abdominal symptoms are usually not as severe as would be found in a suspected surgical lesion, but they mimic the symptoms associated with acute surgical lesions to such an extent that there is room for confusion and disaster.

The authors indicate that sometimes diabetes and surgical lesions may co-exist. Here is an example reported by them. A man of fifty-two had had diabetes for eight years. He had a rather mild pain in the right lower abdomen, and with it there was slight tenderness. There was a temperature of 99. There was no rigidity. He was observed several days. On the fourth day a mass was felt in the right lower abdomen. There had not been any increase in symptoms. When he came to the hospital there was a temperature of 99, a leukocytosis of 13,000, blood sugar 303 mg., plasma CO_2 fifty-four. He was operated upon. There was a large appendiceal abscess. "Here in spite of a large amount of pus, no acidosis had developed and the symptoms were so mild that the extent of the lesion was not recognized." The following are the conclusions of the authors:

"1. Ninety-six or seventy-four per cent of one hundred thirty-six cases of diabetic acidosis presented the abdominal symptoms of nausea, vomiting and abdominal pain, which are associated usually with leukocytosis and fever.

"2. Acidosis should be ruled out in any diabetic presenting abdominal symptoms before surgical intervention is undertaken.

"3. Acute abdominal conditions occurring in diabetics do not seem to produce as severe abdominal symptoms as the underlying pathology would indicate or as developed in a non-diabetic under similar conditions.

"4. Surgery should not be undertaken with a CO_2 of less than forty volumes per cent, and if the emergency will permit, the CO_2 should be elevated to forty-five or fifty-five volumes per cent."

LeRoy Long.

PLASTIC SURGERY

Edited by

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Toxic Formation of Burned Tissues. By W. C. Wilson, J. S. Jeffrey, A. N. Roxburgh and C. P. Stewart. From the Dept. of Surgery, University of Edinburgh, and the Clinical Laboratory, Royal Infirmary, Edinburgh.

Extensive burning injuries in man give rise to severe systemic disturbances which change in nature, and evidently also in causation, as time elapses after the infliction of the injury, thus the clinical course of an extensive burn may be divided into several more or less distinct stages. (1) Initial shock, (2) secondary shock, (3) acute toxemia. (4) septic toxemia and (5) healing. The clinical features of each stage have been described and discussed in previous publications. We are concerned here only with the third stage of acute toxemia, which begins between six and fifty hours after injury, which bears a close resemblance to

other toxic conditions, and which not infrequently ends in death at about seventy hours from the time of the burn.

The etiology of acute toxemia has not yet been definitely established. Results of investigations are recorded in this paper.

REVIEW OF PREVIOUS EXPERIMENTAL INVESTIGATIONS

Avdakoff, in 1876, was first to report that the blood of a toxic animal was poisonous to a healthy animal.

Pfeiffer, in a convincing series of experiments showed that the urine and blood serum of burned rabbits became toxic to mice, guinea pigs, and also to rabbits.

The toxic principles had both neuro-toxic and necro-toxic actions; a study of their chemical characteristics, however, revealed little more than they were labile substances with some properties in common with nucleoproteins and snake venom. Robertson and Boyd demonstrated the toxic nature of the blood of burned animals. Underhill and his associates attributed the systemic disturbance of external burns mainly to increased concentration of the blood; they also held that absorption of a toxin from burned tissues was highly improbable. Underhill and Kapsinov disagreed with the results secured by Robertson and Boyd as to the toxin theory.

METHODS

The experiments were carried out on rabbits. When excessive heat is applied to the skin of a rabbit there is no blistering, but a considerable quantity of oedema fluid accumulates in the subcutaneous tissues; swelling is obvious at one hour and increases up to twenty-four or thirty-six hours, after which slow absorption begins. Very mild degrees of injury by heat are followed by hyperemia and slight oedema, which disappears in a few days. After exposure to higher temperatures oedema is more conspicuous and lasts a week or longer; the skin, however, finally regains its normal condition except for a persistent scaliness, sometimes a few isolated areas of necrosis. Following still more severe injury, the affected skin dies, and is finally thrown off as a dry, wrinkled, black slough; eventually such areas are invaded by micro-organisms. Our object was to produce by the application of heat an accumulation of oedema fluid without necrosis of the skin, without injury to the internal organs by the direct action of heat.

In rabbits the skin of the abdomen was shaved and cleansed by ether and alcohol over an area comprising about one-sixth of the total skin surface. Ether anesthesia, aseptic precautions, midline incision, and the skin of the area together with the subjacent platysma muscle dissected up as two lateral flaps. Heat applied to deep surface of flaps by a very brief exposure to the diathermic current; the active electrode was a flat disc about one cm. in diameter. The incision was closed and in most instances the burned area was protected by collodion applied to the external skin surface. In other experiments the injury was affected by a jet of steam applied to the external skin surface, by either method an injury of the required severity was obtained. The animals subsequently showed no special untoward symptoms.

At varying intervals after burning, the oedema fluid which had accumulated was collected in the following manner. The animal was anesthetized, the area cleansed with ether, the skin and oedematous subcutaneous tissue dissected off, leaving behind a vertical strip on either side of the operative incision, and as much free oedema fluid as possible was collected. When the burned area had been ex-

cised the animal was killed. The excised tissue was cut into small pieces and the oedema fluid expressed through a Buchner filter with suction attached. Ten to twenty cc. were obtained from each animal in this way.

The toxicity of oedema fluid was tested by intravenous injections (into an ear vein) by subcutaneous, and intraperitoneal injection in unanesthetized rabbits, and by intraperitoneal injection in mice.

RESULTS

TABLE I.—Results of Intravenous Injection of oedema fluid.

Injections	Total animals	Died within ten days	Died after ten days	Ill but survived	Not obviously affected
A. Oedema fluid removed at					
4 hours	6	0	0	0	6
6 hours	2	1	1	-	-
12 hours	2	2	-	-	-
24 hours	6	2	-	2	2
27 hours	2	1	1	-	-
48 hours	44	38	2	3	1
B. Oedema fluid removed at 48 hours, passed through Seitz filter	15	7	-	-	8

CONCLUSIONS

(1) Oedema fluid which accumulates in a burned area gradually acquires toxic properties; when collected at forty-eight hours after burning it is frequently lethal to healthy animals of the same species. (2) The development of the toxicity is independent of the action of bacteria; there is evidence that autolysis of the injured tissue is the responsible mechanism. (3) A study of the actions of toxic oedema fluid suggests the presence of more than one toxic component, and that the proportions of the components vary in different samples. (4) The effects produced include toxic action on the nervous system, circulatory depression, and degeneration of liver cells. (5) The toxic principles are associated namely with the globulin fraction. The evidence at present available indicates that the more active principles are higher protein derivatives. (6) The relation of these results to the etiology of acute toxemia of burns in human cases is mentioned. Features which require further investigation are indicated.

COMMENT

The authors are to be congratulated on a very fine bit of experimental work. The evidence here leaves little doubt but that oedema fluid is toxic. This work also helps one to understand why some very extensive burns that do not penetrate deeply can be managed by the immediate use of tannic acid or the tannic acid silver nitrate technique. These agents fix a large amount of the oedema fluid so that the toxic effects are avoided. The fact that the oedema fluid gradually becomes more toxic is significant for the reason that means should be taken early to handle the toxemia, namely fluids and general supportive treatment.

The authors discuss the pathology at length. They point out that there is a toxic effect on the nervous system, circulatory system, and finally a definite degeneration of the liver cells.

The Allantoin Treatment of Ulcers

Since the usual type of treatment has been unsatisfactory in many cases of superficial ulcer which often develops into a deep one involving the subcutaneous tissues and even resulting in a periostitis of the underlying bone, Theodore Kaplan, New York (Journal A. M. A., March 20, 1937), suggests the use of allantoin. Since the action of allantoin lasts only as long as the solution is in contact with the wound, it can therefore be easily controlled. Its effect is entirely local and overgrowth of granulation tissue may be readily checked. The speed with which the necrotic base is converted into a granulating area is remarkable. After the first week the wound assumes the appearance of a healthy granulating ulcer, and day by day new islands of granulation tissue can be seen springing up. Pain, which often accompanies these wounds and is a disabling factor, ceases almost immediately with the application of allantoin. Patients are ambulatory under this treatment. It acts locally as long as allantoin is in contact with the wound. Allantoin seems to have the same curative effect on chronic ulcers as the introduction of maggots, and it is less troublesome for the physician to administer and less disturbing to the patient than the use of insects.

Electrical Alternans: Report of Two Additional Cases

The two cases that are the subject of the report by Jacob G. Brody and Phillip L. Rossman, Youngstown, Ohio (Journal A. M. A., March 6, 1937), include one case of electrical alternans with demonstrable pulsus alternans and one case in which pulsus alternans was not demonstrated. Electrical alternans consists of a regular alternation at equal intervals in contour or amplitude, or both, of successive phases of the electrocardiographic record. White says that electrical alternans accompanying pulsus alternans is rare; the QRS or T waves may rarely alternate in amplitude although not always in the same direction as in the arteriogram. Electrical alternans, like pulsus alternans, is a sign of reduced myocardial reserve. It is of greater significance at slow or moderately increased heart rates than in extreme tachycardia. It may vary in degree, it may be continuous or transient. Electrical alternans, like pulsus alternans, is also found following premature contractions in some cases.

Comparative Efficiency of Commonly Used Flavoring Agents

Harold N. Wright, Minneapolis (Journal A. M. A., March 20, 1937), tested a group of commonly used flavoring agents on approximately 600 individuals to determine their relative efficiency in disguising various types of disagreeable tastes. Considered purely as pleasant tasting vehicles the syrups of prepared cacao and raspberry are the flavors of choice of the largest percentage of individuals. Second choices are the syrups of orange, cherry, sarsaparilla and citric acid. The syrups of raspberry, eriodicyton and prepared cacao are the flavors of choice in disguising the taste of bitter drugs such as alkaloids. The syrups of cinnamon, orange and sarsaparilla are the most effective agents in disguising the salty taste of such drugs as ammonium chloride and sodium bromide. The syrups of raspberry and prepared cacao are the flavors of choice in disguising the taste of tincture of digitalis. The most efficient "all-purpose" flavoring agents of the group studied are the syrups of prepared cacao and raspberry.

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WOODS, L. E.	Chickasha

GRANT

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LAWSON, E. E.	Medford
LIVELY, S. A.	Wakita

GREER

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BORDER, G. F.	Mangum
CHERRY, G. P.	Mangum
GILLILAND, JAMES O.	Mangum
HOLLIS, J. B.	Mangum
LANDSEN, J. B.	Granite
LOWE, J. T.	Mangum
MEREDITH, J. S.	Duke
NELSON, H. J.	Granite
OLIVER, W. D.	Mangum
PEARSON, LEB. E.	Mangum
POER, E. M.	Mangum
RUDE, JOE C.	N. Y. City Hospital, New York City

HARMON

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JONES, JAMES E.	Hollis
LYNCH, RUSSELL H.	Hollis
YEARGAN, WM. M.	Hollis

HUGHES

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BUTTS, IMOGENE	Holdenville
CASEY, E. A.	Wetumka
DAVENPORT, A. L.	Holdenville
DIGGS, G. W.	Wetumka
FLOYD, W. E.	Holdenville
FORD, R. B.	Medical Arts Bldg., Oklahoma City
FRYE, HARRY	Holdenville
HAMILTON, S. H.	Non
HICKS, C. A.	Wetumka
HOWELL, H. A.	Holdenville
MORRIS, R. D.	Allen
MUNAL, JOHN	Holdenville
PRYOR, V. W.	Holdenville

STONER, R. W. Wetumka
TAYLOR, W. L. Holdenville
WALLACE, C. S. Holdenville

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ALLGOOD, JOHN Altus
BERRY, THOS. W. CCC Camp, Winnsboro, Texas
BIRD, JESSE 1545 N. W. 44th, Oklahoma City
CROW, E. S. Olustee
ENSEY, J. E. Altus
FOX, RAYMOND H. Altus
HIX, JOSEPH B. Altus
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McCONNELL, L. H. Altus
REID, JOHN R. Altus
SPEARS, CLAUD G. Altus
STARKEY, WAYNE Altus
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COLLINS, D. B. Waurika
DERR, J. I. Waurika
EDWARDS, F. M. Ringling
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MAUPIN, C. M. Waurika
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BARKER, W. JACKSON Ponca City
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BECKER, L. H. Blackwell
BROWNE, H. S. Ponca City
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CURRY, JOHN R. Blackwell
GHORMLEY, J. G. Blackwell
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GORDON, D. M. Ponca City
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McELROY, THOMAS Ponca City
MILLER, D. W. Blackwell
MOORE, G. C. Ponca City
MORGAN, L. S. Ponca City
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BONHAM, J. M. Hobart
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FINCH, J. WM. Sentinel
HATHAWAY, A. H. Mountain View
LAND, J. A. Hobart
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LINGINFELTER, PAUL Talihina
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SKIMP, FRANK S Talihina
VAN CLEVE, WM. Talihina
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WOODSON, O. M. Poteau
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BURLESON, NED Prague
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MARSHALL, A. M. Chandler
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NORWOOD, F. H. Prague
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ROLLINS, J. S. Prague

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BARKER, C. B. Guthrie
BARKER, E. O. Guthrie
BARKER, PAULINE Guthrie
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CORNWELL, N. L. Coyle
DRESBACH, H. V. Mulhall
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GOODRICH, E. E. Crescent
GRAY, DAN Guthrie
HAHN, L. A. Guthrie

HILL, C. B.	Guthrie
LARKIN, W. H.	Minco
LE HEW, Jr., J. L.	Guthrie
MILLER, WM. C.	Guthrie
PETTY, C. S.	Guthrie
PETTY, JAMES	Guthrie
RINGROSE, R. F.	Guthrie
RITZHAUPT, L. H.	Guthrie
SOUTER, J. E.	Guthrie
TRIGG, F. E.	Guthrie
WEST, A. A.	Guthrie

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SPECHT, ELSIE	Fairview

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YORK, J. F.	Madill

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MORROW, B. L.	Saline
PUCKETT, CARL	22 W. Sixth, Oklahoma City
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ROYSER, R. L.	Purcell

McCURTAIN

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MORELAND, W. A.	Idabel
OLIVER, R. B.	Idabel
SHERRILL, R. H.	Broken Bow
WILLIAMS, R. D.	Idabel

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TOLLESON, W. A.	Eufaula
WOOD, JAS. L.	Eufaula

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BAILEY, H. C.	Sulphur
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BURKE, RICHARD M.	Sulphur
LUSTER, J. C.	Davis
SADLER, F. E.	Sulphur
SHIVERS, E. E.	Davis
SLOVER, GEO.	Sulphur
SPROUSE, O. W.	Sulphur

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BLAKEMORE, J. L.	Barnes Bldg.

BRUTON, L. D.	Commercial Natl. Bldg.
CAMPBELL, J. F.	Barnes Bldg.
COACHMAN, E. H.	Manhattan Bldg.
DE GROOT, C. E.	Manhattan Bldg.
DONNELL, R. N.	Raymond Bldg.
DORWART, F. G.	Barnes Bldg.
EWING, F. W.	Surety Bldg.
FITE, E. H.	Barnes Bldg.
FITE, W. P.	Barnes Bldg.
FRYER, S. J.	Surety Bldg.
FULLENWIDER, C. M.	Barnes Bldg.
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HOLCOMB, R. N.	Surety Bldg.
JOBLIN, W. R.	Porter
KAISER, GEO. L.	Checotah
KLASS, O. C.	Surety Bldg.
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OLDHAM, Jr., I. B.	426 North Sixth
OLDHAM, Sr., I. B.	426 North Sixth
RAFTER, J. G.	Manhattan Bldg.
RICE, C. V.	1620 West Okmulgee
SCOTT, H. A.	Commercial Natl. Bldg.
SWEET, L. K.	Tahlequah
THOMAS, L. M.	Webber Falls
THOMPSON, M. K.	Surety Bldg.
TILTON, W. B.	Vet. Hospital, Muskogee
WATERFIELD, F. E.	Commercial Natl. Bldg.
WHITE, J. H.	Surety Bldg.
WOLFE, I. C.	426 North Sixth

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DRIVER, J. W.	Perry
EATON, F. C.	Perry
EVANS, A. M.	Perry
FRANCIS, J. W.	Perry
RENFROW, T. F.	Billings

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PRENTISS, H. M.	Nowata
ROBERTS, S. P.	Nowata
SCOTT, M. B.	Delaware
SUDDERTH, J. P.	Nowata

OKFUSKEE

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BLOSS, C. M.	Okemah
BOMBARGER, C. C.	Paden
BRICE, M. O.	Okemah
COCHRAN, C. M.	Okemah
JENKENS, W. P.	Okemah
KENNEDY, J. A.	Okemah
KEYES, ROBERT	Wewoka
LUCAS, A. C.	Castle
MELTON, A. S.	Okemah
PEMBERTON, J. M.	217½ West Commerce Oklahoma City
PRESTON, J. R.	Weleetka
SPICKARD, L. J.	Okemah

OKLAHOMA

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AKIN, R. H.	400 West Tenth St.
ALFORD, J. M.	Medical Arts Bldg.
ALLEN, E. P.	1200 North Walker
ANDREWS, LELIA E.	1200 North Walker

APPLETON, M. M.	400 West 10th St.	GOODWIN, R. Q.	Medical Arts Bldg.
ARRINGTON, C. T.	805 North Walnut	GRAENING, P. K.	610 North West Ninth St.
BAILEY, F. M.	CCC Camp, James, New Mexico	GRAHAM, ALLISON T.	104 West Commerce
BAILEY, WILLIAM H.	301 West Twelfth St.	GRAY, FLOYD	Osler Bldg.
BAIRD, Sr., W. D.	2519½ South Robinson	GRAY, J. WORTH	1315 South Agnew
BALYEAT, RAY M.	1200 North Walker	GUTHRIE, A. L.	1135 North Robinson
BARKER, CHAS. E.	505-13 Osler Bldg.	HALL, CLARK H.	Medical Arts Bldg.
BARB, THOS. J.	240 West Commerce	HANEY, A. H.	Perrine Bldg.
BATES, C. E.	Federal Bldg.	HAMMONDS, O. O.	623 North East 18th St.
BATCHELOR, J. J.	Medical Arts Bldg.	HARBISON, FRANK	Terminal Bldg.
BELL, A. H.	300 West 12th St.	HARBISON, J. E.	Terminal Bldg.
BEYER, M. R.	2006 North West 39th St.	HARRIS, H. W.	1200 North Walker
BINKLEY, JAMES G.	Medical Arts Bldg.	HASKETT, PAUL E.	Hales Bldg.
BINKLEY, J. SAM	Medical Arts Bldg.	HATCHETT, J. A.	Medical Arts Bldg.
BOATRIGHT, LLOYD C.	Perrine Bldg.	HAYES, BASIL A.	625 North West 10th St.
BOEND, REX	Medical Arts Bldg.	HAYGOOD, CHAS. W.	Municipal Bldg.
BOGGS, NATHAN	Perrine Bldg.	HAZEL, O. G.	Medical Arts Bldg.
BONDURANT, C. P.	Medical Arts Bldg.	HEATLEY, JOHN E.	Medical Arts Bldg.
BONHAM, WM. L.	Medical Arts Bldg.	HEFFERNON, GEO. A.	610 West Ninth St.
BORECKY, GEORGE L.	Ramsey Tower	HENDERSON, JESSE L.	119 North Broadway
BOWEN, RALPH	1200 North Walker	HERMANN, JESS	Medical Arts Bldg.
BRADLEY, H. C.	Perrine Bldg.	HETHERINGTON, A. J.	2014 Gatewood Ave.
BRANHAM, D. W.	Medical Arts Bldg.	HICKS, F. B.	Medical Arts Bldg.
BREWER, A. M.	Perrine Bldg.	HIRSHFIELD, A. C.	Medical Arts Bldg.
BROWN, G. W.	Medical Arts Bldg.	HOLLIDAY, J. R.	1200 North Walker
BRUNDAGE, C. L.	1200 North Walker	HOOD, F. REDDING	1200 North Walker
BURTON, JOHN F.	Osler Bldg.	HOOT, M. P.	301 West 12th St.
BUTLER, H. W.	1200 North Walker	HOWARD, R. M.	Osler Bldg.
CAILEY, LEO F.	Medical Arts Bldg.	HUGGINS, J. R.	City Hall Bldg.
CAMPBELL, COYNE H.	Medical Arts Bldg.	HULL, WAYNE M.	800 North East 13th St.
CANADA, J. C.	216½ West Commerce	HUNTER, GEO.	Wewoka
CATES, ALBERT	Medical Arts Bldg.	HYROOP, GILBERT L.	Medical Arts Bldg.
CAVINESS, J. J.	Medical Arts Bldg.	ISHMAEL, WM. K.	717 North Robinson
CHARNEY, L. H.	Medical Arts Bldg.	JACKSON, A. R.	2528½ South Robinson
CLARK, ANSON L.	Medical Arts Bldg.	JACOBS, MINARD F.	Medical Arts Bldg.
CLOUDMAN, H. H.	Medical Arts Bldg.	JANCO, LEON	10 West Park Place
CLYMER, CYRIL E.	Medical Arts Bldg.	JETER, HUGH	1200 North Walker
COLEY, A. J.	Hightower Bldg.	JOBE, VIRGIL R.	717 North Robinson
COLLINS, H. D.	Medical Arts Bldg.	JOLLY, W. J.	614 West 14th St.
COOPER, F. M.	Medical Arts Bldg.	JONES, HUGH	Medical Arts Bldg.
COSTON, TULLOS O.	First National Bank Bldg.	KELLER, W. F.	Medical Arts Bldg.
COTTRELL, W. P.	1706 South East 29th St.	KELSO, JOSEPH W.	Medical Arts Bldg.
DAILY, H. J.	Medical Arts Bldg.	KELTZ, BERT F.	Medical Arts Bldg.
DANIELS, HARRY A.	610 West Ninth St.	KERNODLE, S. E.	First Natl. Bldg.
DAVIS, C. E.	930 North West Ninth St.	KIMBALL, G. H.	Medical Arts Bldg.
DAVIS, E. P.	Osler Bldg.	KUHN, JOHN F.	Medical Arts Bldg.
DEMAND, F. A.	1200 North Walker	KUHN, Jr., JOHN F.	Medical Arts Bldg.
DERSCH, WALTER H.	Medical Arts Bldg.	LACHMANN, ERNST	801 East 13th St.
DICKSON, GREEN K.	1200 North Walker	LAIN, E. S.	Medical Arts Bldg.
DILL, FRANCIS E.	Medical Arts Bldg.	LAMB, JOHN H.	Medical Arts Bldg.
DOWDY, THOS. W.	Medical Arts Bldg.	LAMBKE, PHIL M.	605 North East 28th St.
DOUGHERTY, VIRGIL T.	Gorei, Abyssinia, Africa	LA MOTTE, GEORGE A.	Colcord Bldg.
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EASTLAND, WM. E.	Medical Arts Bldg.	LANGSFORD, WM.	323 North East 11th St.
ELEY, N. P.	400 West Tenth St.	LANGSTON, WANN	Medical Arts Bldg.
EMENHISER, LEE K.	Barnes Hospital St. Louis, Mo.	LAWSON, PAT	818 North West 11th St.
EPLEY, C. O.	418 Osler Bldg.	LEE, CLARENCE E.	Hightower Bldg.
ESKRIDGE, J. B.	1200 North Walker	LEMON, CECIL W.	Medical Arts Bldg.
ERWIN, F. B.	Medical Arts Bldg.	LENEY, FANNIE LOU BRITTAIN	400 West 10th
FAGIN, HERMAN	400 West Tenth St.	LEONARD, C. E.	917 N. W. 34th St.
FARIS, BRUNEL D.	Medical Arts Bldg.	LEWIS, A. R.	Hightower Bldg.
FELTS, GEO. R.	Osler Bldg.	LINDSTROM, W. C.	Medical Arts Bldg.
FERGUSON, E. G.	Medical Arts Bldg.	LINGENFELTER, F. M.	1200 North Walker
FERGUSON, E. S.	Medical Arts Bldg.	LITTLE, JOHN R.	Ramsey Tower
FISHMAN, C. J.	132 West Fourth St.	LONG, LEROY	Medical Arts Bldg.
FITZ, R. G., Taming Fu Hoppl, Prov. No. China		LONG, LEROY D.	Medical Arts Bldg.
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FOERSTER, HERVEY A.	119 North Broadway	LONG, WENDELL	Medical Arts Bldg.
FORD, HARRY C.	Medical Arts Bldg.	LOWRY, DICK	1200 North Walker
FRIERSON, S. E.	Medical Arts Bldg.	LOWRY, TOM	1200 North Walker
FRYER, S. R.	119 West Fifth St.	LOY, C. F.	Perrine Bldg.
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FULTON, GEO. S.	American Natl. Bank Bldg.	LYON, J. I.	Edmond
GARRISON, GEO. H.	1200 North Walker	MacDONALD, J. C.	300 West Twelfth St.
GEE, O. J.	Medical Arts Bldg.	MARGO, E.	717 North Robinson St.
GLOMSET, JOHN L.	621 Osler Bldg.	MARTIN, J. T.	1200 North Walker
GOLDFAIN, E.	Medical Arts Bldg.	MARTIN, HOWARD	Ramsey Tower
		McBRIDE, Earl D.	717 North Robinson

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 MILLS, R. C. City Hall Bldg.
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 MOORMAN, L. J. 1200 North Walker
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 MUSICK, V. H. Medical Arts Bldg.
 MUSSIL, W. M. Medical Arts Bldg.
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 NIELSEN, GERTRUDE 1200 North Walker
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 O'DONOGHUE, D. H. Medical Arts Bldg.
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 PATTERSON, ROBT. U. 801 North East 13th St.
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 PENICK, GRIDER Colcord Bldg.
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 POSTELLE, J. M. Medical Arts Bldg.
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 PRICE, J. S. 1200 North Walker
 RECK, J. A. Colcord Bldg.
 REED, EMIL P. 1200 North Walker
 REED, HORACE, Osler Bldg.
 REED, JAMES ROBERT Medical Arts Bldg.
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 ROBINSON, J. H. 301 West Twelfth St.
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 RUCKS, Jr., W. W. 300 West Twelfth St.
 RUCKS, W. W. 300 West Twelfth St.
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 SANGER, F. M. Key Bldg.
 SANGER, WINNIE M. Key Bldg.
 SERWER, MILTON 1200 North Walker
 SEWELL, DAN R. 400 North West Tenth St.
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 SHEPPARD, MARY V. S. 1200 North Walker
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 STARRY, L. J. 1200 North Walker
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 STOUT, M. E. 209 West Thirteenth St.
 STRADER, E. S. Hightower Bldg.
 STROTHER, S. P. 120 North West 23rd St.
 SULLIVAN, ELIJAH S. Medical Arts Bldg.
 SULLIVAN, ERNEST Hightower Bldg.

TABOR, GEO. R. First National Bank
 TAYLOR, C. B. Medical Arts Bldg.
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 THOMPSON, W. J. Medical Arts Bldg.
 TOOL, DONOVAN Edmond
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 WATSON, O. ALTON 400 N. W. Tenth St.
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 WELLS, WALTER W. Medical Arts Bldg.
 WEST, W. K. 1200 North Walker
 WESTFALL, L. M. Medical Arts Bldg.
 WHITE, ARTHUR W. Medical Arts Bldg.
 WHITE, OSCAR 1200 North Walker
 WHITE, PHIL E. Perrine Bldg.
 WILDMAN, S. F. Medical Arts Bldg.
 WILKINS, HARRY Medical Arts Bldg.
 WILLIAMS, L. C. Osler Bldg.
 WILLIAMSON, W. H. Hightower Bldg.
 WILSON, KENNETH J. Medical Arts Bldg.
 WOLFF, J. P. Osler Bldg.
 WOODWARD, NEIL W. 1200 North Walker
 WRIGHT, HARPER 240 West Commerce
 YOUNG, A. M. Medical Arts Bldg.

OKMULGEE

ALEXANDER, LIN Okmulgee
 ALEXANDER, ROBT. L. Okmulgee
 BOLLINGER, I. W. Henryetta
 BOSWELL, H. D. Henryetta
 CARLOSS, T. C. Morris
 CARNELL, M. D. Okmulgee
 DIVINE, DUKE G. Wagoner
 EDWARDS, J. G. Okmulgee
 GLISMANN, M. B. Okmulgee
 HOLMES, A. R. Henryetta
 HUDSON, W. S. Okmulgee
 KILPATRICK, G. A. Henryetta
 LESLIE, S. B. Okmulgee
 MABEN, CHAS. S. Okmulgee
 MATHENEY, J. C. Okmulgee
 McKINNEY, G. Y. Henryetta
 MING, C. M. Okmulgee
 MITCHENER, W. C. Okmulgee
 NELSON, J. P. Beggs
 RAINS, H. L. Okmulgee
 RANDEL, D. M. Okmulgee
 RANDELL, H. O. Okmulgee
 RODDA, E. D. Okmulgee
 ROGERS, G. A. CCC Camp, Okmulgee
 SIMPSON, N. N. Henryetta
 STARK, W. W. Fort Gibson
 TORRANCE, L. B. Okmulgee
 VERNON, W. C. Okmulgee
 WALLACE, V. M. Morris
 WATSON, F. S. Okmulgee

OSAGE

AARON, W. H. Pawhuska
 ALEXANDER, EVERETT T. Barnsdall
 BAYLOR, R. A. Fairfax
 DALY, J. F. Pawhuska
 DOZIER, B. E. Snider
 GOVAN, T. P. Pawhuska
 GUILD, C. H. Shidler
 HEMPHILL, G. K. Pawhuska
 HEMPHILL, P. H. Pawhuska

KARASEK, M.	Shidler
LIPE, E. N.	Fairfax
LOGAN, C. K.	Hominy
RAGAN, T. A.	Fairfax
RUST, M. E.	Pawhuska
SMITH, R. O.	Hominy
SULLIVAN, B. F.	Barnsdall
WALKER, G. I.	Hominy
WALKER, ROSCOE	Pawnuska
WEIRICH, C. R.	Pawhuska
WILLIAMS, CLAUD W.	Pawhuska
WORTEN, D.	Pawhuska

OTTAWA

AISENSTADT, E. ALBERT	Picher
BARRY, J. R.	Picher
BUTLER, V. V.	Picher
CANNON, R. F.	Miami
CHESNUT, W. G.	Miami
COLVERT, G. W.	Miami
CONNELL, MATT	Picher
COOTER, A. M.	Miami
CRAIG, J. W.	Miami
DeARMAN, M. M.	Miami
DeTAR, G. A.	Miami
DOLAN, W. M.	Picher
HAMPTON, J. B.	Commerce
HUGHES, A. R.	Wyandotte
JACOBY, J. S.	Commerce
KERR, W. C.	Picher
LANNING, J. M.	378 Carson St., Memphis, Tenn.
LIGHTFOOT, J. B.	Miami
McKAY, ED. D.	Miami
McNAUGHTON, G. P.	Miami
MILLER, H. K.	Fairland
RALSTON, B. W.	Commerce
RITCHEY, H. C.	Picher
RUSSELL, RICHARD	Picher
SHELTON, B. W.	Miami
SAYLES, W. JACKSON	Miami
SMITH, W. B.	Fairland
WORMINGTON, F. L.	Miami

PAWNEE

BARBOUR, L. C.	Ralston
BEITMEN, C. E.	Kendrick
BROWNING, R. L.	Pawnee
HADDOX, C. H.	Pawnee
HETHERINGTON, L. P.	Pawnee
JONES, R. E.	Pawnee
LeHEW, ELTON W.	Pawnee
LeHEW, J. L.	Pawnee
ROBINSON, E. T.	Cleveland
SADDORIS, M. L.	Cleveland
SPALDING, H. B.	Ralston

PAYNE

ADAMS, JAMES E.	Cushing
BASSETT, C. M.	Cushing
CLEVERDON, L. A.	Stillwater
DAVIS, BENJ.	Cushing
FRY, POWELL E.	Stillwater
GROW, MAX H.	Stillwater
HACKLER, JOHN W.	Stillwater
HARRIS, E. M.	Cushing
HERRINGTON, D. J.	Cushing
HOLBROOK, R. W.	Perkins
LEATHEROCK, R. E.	Cushing
MANNING, H. C.	Cushing
MARTIN, EMMETT O.	Cushing
MARTIN, JOHN F.	Stillwater
MARTIN, J. W.	Cushing
MITCHELL, L. A.	Stillwater
PHILLIPS, J. W.	Oilton
RICHARDSON, P. M.	Cushing

ROBERTS, R. E.	Stillwater
SMITH, A. B.	Stillwater
STRAHN, EVA	Stillwater
WAGGONER, ROY E.	Stillwater
WALTRIP, J. R.	Yale
WILHITE, L. R.	Perkins

PITTSBURG

BARTHELD, F. T.	McAlester
BAUM, F. J.	McAlester
BRONSON, C. J.	McAlester
BUNN, A. D.	Savanna
DORROUGH, JOE	McAlester
GEORGE, L. J.	Stuart
GREENBERGER, E. D.	McAlester
KIES, B. B.	CCC Camp, Checotah
KILPATRICK, G. A.	McAlester
KLOTZ, W. F.	McAlester
KUYRKENDALL, L. C.	McAlester
LIVELY, CLAUDE E.	McAlester
McCARLEY, T. H.	McAlester
McFADDEN, C. A.	CCC Camp, Wilburton
MILLS, CHAS. K.	McAlester
MUNN, J. A.	McAlester
NORRIS, T. T.	Krebs
PARK, J. F.	McAlester
PEARCE, C. M., State Capitol Bldg., Oklahoma City	
PEMBERTON, R. K.	McAlester
RAMSEY, W. G.	Quinton
RICE, O. W.	McAlester
RUSSELL, ALLEN R.	McAlester
SAMES, W. W.	Hartshorne
SHULLER, E. H.	McAlester
THOMAS, ERNEST	McAlester
WELCH, A. J.	McAlester
WILLIAMS, C. O.	McAlester
WILLOUR, L. S.	McAlester
WILSON, HERBERT A.	McAlester

PONTOTOC

BRECO, J. G.	Ada
BRYDIA, CATHERINE	Ada
BURROWS, L. I.	Ada
CANADA, E. A.	Ada
CRAIG, JOHN R.	Ada
COWLING, ROBT. E.	Ada
CUMMINGS, ISHAM L.	Ada
DEAN, W. F.	Ada
FRY, MELVIN	Stonewall
GULLATT, E. M.	Ada
HINES, SIDNEY, J. T.	Fittstown
LANE, WILSON H.	Ada
LEWIS, E. F.	Ada
LEWIS, MILES L.	Ada
McKEEL, SAM A.	Ada
McNEW, M. C.	Ada
MILLER, OSCAR H.	Ada
MOREY, JOHN B.	Ada
NEEDHAM, C. F.	Ada
PETERSON, WM. G.	Ada
ROSS, SAMUEL P.	Ada
RUTLEDGE, JAS. A.	Ada
SEABORN, T. L.	Roff
SUGG, ALFRED R.	Ada
WEBSTER, M. M.	Ada
WELBORN, ORANGE E.	Ada
YATES, JUNE	Ada

POTTAWATOMIE

ANDERSON, R. M.	Shawnee
APPLEWHITE, G. H.	Shawnee
BAKER, M. A.	Shawnee
BALL, W. A.	Wanette
BYRUM, J. M.	Shawnee

CAMPBELL, H. G.	St. Louis, Okla.
CARSON, F. L.	Shawnee
CORDELL, U. S.	McComb
CULLUM, J. E.	Earlsboro
FORTSON, J. L.	Tecumseh
GALLAHER, F. C.	231 W. Washington, Chicago
GALLAHER, W. M.	Shawnee
GASTON, JOHN I.	Shawnee
GILLICK, D. W.	Shawnee
HUGHES, H. E.	Shawnee
HUGHES, J. E.	Shawnee
KAYLOR, R. C.	McCloud
KEEN, FRANK M.	Shawnee
MATTHEWS, W. F.	Tecumseh
McADAMS-WILLIAMS, ALPHA	Shawnee
NEWLIN, FRANCES P.	Shawnee
PARAMORE, C. F.	Shawnee
RICE, E. E.	Shawnee
ROWLAND, T. D.	Shawnee
ROYSTER, J. H.	Wanette
STEVENS, WALTER S., 315 P. O. Bldg., Okla. City	
STOOKSBURY, J. M.	Shawnee
WALKER, J. A.	Shawnee
WILLIAMS, A. J.	McLoud

PUSHMATAHA

CONNALLY, D. W.	Antlers
GUINN, E.	Antlers
HUCKABAY, B. M.	Greenville, Tex.
LAWSON, JOHN S.	Antlers
PATTERSON, E. S.	Antlers

ROGERS

ANDERSON, F. A.	Claremore
ANDERSON, P. S.	Claremore
ANDERSON, W. D.	Claremore
BASSMAN, CAROLINE	Claremore
BESON, C. W.	Claremore
BIGLER, EARL E.	Claremore
BUSHYHEAD, J. C.	Claremore
COLLINS, B. F.	Claremore
HOWARD, W. A.	Chelsea
JENNINGS, K. D.	Chelsea
MELOY, R. C.	Claremore
NELSON, D. C.	Claremore

SEMINOLE

BRIGGS, T. H.	Wewoka
CHAMBERS, C. S.	Seminole
DAVIS, JOHN	Seminole
DEATON, A. N.	Wewoka
GIESEN, A. F.	Konawa
GRIMES, J. P.	Wewoka
HUDDLESTON, W. A.	Konawa
JONES, W. E.	Seminole
KILES, H. A.	Konawa
KNIGHT, W. L.	Wewoka
LONG, W. J.	Konawa
LYONS, D. J.	Seminole
MARTIN, W. S.	Wewoka
MILLS, N. W.	Seminole
MOSHER, D. D.	Seminole
PACE, L. R.	Seminole
PRICE, J. T.	Seminole
REEDER, H. M.	Konawa
STEPHENS, A. B.	Seminole
STEVENS, C.	Seminole
THROGMORTON, H. B.	Seminole
TURLINGTON, M. M.	Seminole
VAN SANDT, G. B.	Wewoka
VAN SANDT, M. M.	Wewoka
WALKER, A. A.	Wewoka
WARE, T. H.	Seminole
WHITE, J. H.	Wewoka

WHITTLE, C. C.	234 W. First Ave., Mesa, Ariz.
WRIGHT, P. E.	Sasakwa

SEQUOYAH

CHEEK, J. A.	Sallisaw
MORROW, J. A.	Sallisaw

STEPHENS

CARMICHAEL, J. B.	Duncan
COKER, JOHN K.	Duncan
DOWNING, G. G.	Marlow
HARGROVE, FRED T.	Duncan
HARRISON, C. M.	Comanche
IVY, W. S.	Duncan
KING, E. G.	Duncan
LINDLEY, E. C.	Duncan
McCLAIN, W. Z.	Marlow
McMAHAN, A. M.	Duncan
PATTERSON, J. L.	Duncan
PRUITT, C. C.	Comanche
RICHARDSON, R. W.	Duncan
SALMON, W. T.	Duncan
SMITH, L. P.	Marlow
TALLEY, C. N.	Marlow
THOMASON, E. B.	Marlow
WEEDN, Jr., A. J.	Duncan
WILLIAMSON, S. H.	Duncan

TEXAS

BLUE, JOHNNY A.	Guymon
HAYES, R. B.	Guymon
LEE, DANIEL S.	Guymon
REED, PAUL	1932 New Hampshire, Hollywood, California
SMITH, MORRIS	Guymon

TILLMAN

ALLEN, C. C.	Frederick
ARRINGTON, J. E.	Frederick
BACON, O. G.	Frederick
BOX, O. H.	Grandfield
CHILDERS, J. E.	Tipton
DAVIS, W.	Davidson
FISHER, R. L.	Frederick
FUQUE, W. A.	Grandfield
OSBORN, JR., JAMES D.	Frederick
REYNOLDS, J. C.	Frederick
SPURGEON, T. F.	Frederick

TULSA

ALLEN, V. K.	1001 Medical Arts Bldg.
ALLISON, T. P.	Sand Springs
ALSPACH, W. L.	Springer Clinic
ARMSTRONG, O. C.	915 Medical Arts Bldg.
AMENT, C. M.	305 Ritz Bldg.
ATCHLEY, R. Q.	507 Medical Arts Bldg.
ATKINS, PAUL N.	1011 Medical Arts Bldg.
BARHAM, J. H.	314 New Daniel Bldg.
BEESELEY, W. W.	501 Medical Arts Bldg.
BEYER, J. W.	621 McBirney Bldg.
BILLINGTON, J. J.	404 Medical Arts Bldg.
BLACK, HAROLD J.	209 Medical Arts Bldg.
BOLTON, J. F.	211 Medical Arts Bldg.
BRADFIELD, S. J.	607 Medical Arts Bldg.
BRADLEY, C. E.	202 Medical Arts Bldg.
BRANLEY, BERNARD L.	315 Medical Arts Bldg.
BRASWELL, JAS. C.	1109 Medical Arts Bldg.
BROGDEN, J. C.	414-15 Medical Arts Bldg.
BROOKSHIRE, J. E.	313 Ritz Bldg.
BROWNE, HENRY S.	615 Medical Arts Bldg.
BRYAN, Jr., W. J.	801 Medical Arts Bldg.
CALHOUN, C. E.	Sand Springs

CALHOUN, WALTER H.	405 Daniels Bldg.	LHEVINE, MORRIS B.	1007 Medical Arts Bldg.
CALLAHAN, H. W.	902 Medical Arts Bldg.	LONEY, W. R. R.	301 Medical Arts Bldg.
CAMPBELL, W. M.	10½ North Lewis	LYNCH, T. J.	201 Philcade Bldg.
CARNEY, A. B.	402 Atlas Life Bldg.	LOWE, J. O.	402 Atlas Bldg.
CHALMERS, J. S.	Sand Springs	MacKENZIE, IAN	510 Medical Arts Bldg.
CHARBONNET, P. N.	206 Medical Arts Bldg.	McCOMB, L. A.	801 Medical Arts Bldg.
CHILDS, D. B.	1226 South Boston	McDONALD, D. M.	1739 South Utica
CHILDS, HENRY C.	1226 South Boston	McDONALD, J. E.	310 Medical Arts Bldg.
CHILDS, J. W.	1226 South Boston	McGILL, RALPH A.	1010 Medical Arts Bldg.
CLINTON, FRED S.	823 Wright Bldg.	McGUIRE, H. J.	910 Medical Arts Bldg.
COHENOUR, E. L.	1102 Medical Arts Bldg.	McKELLAR, MALCOLM	604 South Cincinnati
CLULOW, GEO. H.	410 McBirney Bldg.	McLEAN, B. W.	Jenks
COOK, ALBERT W.	1006 Medical Arts Bldg.	McQUAKER, MOLLY	1648 East 13th St.
COULTER, T. B.	1011 Medical Arts Bldg.	MARGOLIN, BERTHA	214 Medical Arts Bldg.
CRAWFORD, WM. S.	Nat'l Bank of Tulsa Bldg.	MAYGINNIS, P. H.	505 Palace Bldg.
CRONK, FRED Y.	801-05 Medical Arts Bldg.	MILLER, GEORGE H.	206 Atlas Bldg.
DAILY, R. E.	Bixby	MINER, J. L.	810 Medical Arts Bldg.
DAVIS, A. H.	710 Medical Arts Bldg.	MOHRMANN, S. S.	611 Daniels Bldg.
DAVIS, B. J.	Sand Springs	MUNDING, L. A.	516 Medical Arts Bldg.
DAVIS, T. H.	404 Medical Arts Bldg.	MURDOCK, H. D.	1011 Medical Arts Bldg.
DEAN, W. A.	610 Medical Arts Bldg.	MURRAY, P. G.	506 Medical Arts Bldg.
DENNY, E. R.	1105 Medical Arts Bldg.	MURRAY, SILAS	501 Medical Arts Bldg.
DIEFFENBACH, N. J.	704 Medical Arts Bldg.	MYERS, F. C.	502 Daniels Bldg.
DILLON, C. A.	212 Daniel Bldg.	NAPPER, MARVIN L.	1007 Medical Arts Bldg.
DUNLAP, ROY W.	808 Medical Arts Bldg.	NAUHEIM, H. S.	511 Medical Arts Bldg.
EDWARDS, D. L.	203 Philcade Bldg.	NEAL, JAMES H.	1944 North Denver Place
EMERSON, A. V.	312 Medical Arts Bldg.	NELSON, F. J.	603 Medical Arts Bldg.
EADS, CHAS. H.	607 Medical Arts Bldg.	NELSON, F. L.	614 Daniels Bldg.
EVANS, Hugh J.	503 Medical Arts Bldg.	NELSON, I. A.	1107 Medical Arts Bldg.
FARRIS, H. LEE	303 Medical Arts Bldg.	NELSON, M. O.	307 Medical Arts Bldg.
FLACK, F. L.	Natl. Bank of Tulsa Bldg.	NESBITT, E. P.	917 Medical Arts Bldg.
FLANAGAN, O. A.	Roberts Bldg.	NESBITT, P. P.	917 Medical Arts Bldg.
FORD, H. W.	417 Oklahoma Natl. Bank Bldg.	NORMAN, G. R.	17½ North Lewis
FRANKLIN, S. E.	Broken Arrow	NORTHROP, L. C.	410 McBirney Bldg.
FULCHER, JOSEPH	417 Medical Arts Bldg.	OSBORN, GEO. R.	1105 Medical Arts Bldg.
GARABEDIAN, G.	15 West 13th St.	PAVY, C. A.	801 Medical Arts Bldg.
GARRETT, D. L.	701 Medical Arts Bldg.	PEDEN, J. C.	612 Medical Arts Bldg.
GILBERT, J. B.	307 Roberts Bldg.	PERRY, HUGH,	416 McBirney Bldg.
GLASS, FRED A.	404 Medical Arts Bldg.	PERRY, JOHN C.	618 McBirney Bldg.
GODDARD, R. K.	Skiaotook	PIGFORD, A. W.	1001 Medical Arts Bldg.
GOODMAN, SAMUEL	603 Medical Arts Bldg.	PIGFORD, R. C.	1001 Medical Arts Bldg.
GORRELL, J. FRANKLIN,	610 Medical Arts Bldg.	PORTER, H. H.	510 Medical Arts Bldg.
GRAHAM, HUGH C.	1501 South Baltimore	PRESSON, L. C.	902 Medical Arts Bldg.
GREEN, HARRY	1116 Medical Arts Bldg.	PRICE, HARRY	407 Medical Arts Bldg.
GROSSHART, PAUL	302 Medical Arts Bldg.	RAY, R. G.	401 Atlas Bldg.
HALL, G. H.	427 McBirney Bldg.	REESE, K. C.	1101 Medical Arts Bldg.
HARALSON, CHAS. H.	816 Medical Arts Bldg.	REYNOLDS, J. L.	305 Palace Bldg.
HARRIS, BUNN,	Box 356, Jenks	RHODES, R. E. LEE	509 Medical Arts Bldg.
HART, M. M.	1232 South Boulder	RICHEY, S. M.	3830 West 44th St.
HART, M. O.	1232 South Boulder	ROBERTS, T. R.	417 Wright Bldg.
HASKINS, THOS. M.	814 Daniels Bldg.	ROGERS, J. W.	407 Medical Arts Bldg.
HAYS, LUVERN	1001 Medical Arts Bldg.	ROTH, A. W.	607 Medical Arts Bldg.
HENDERSON, F. W.	304 Medical Arts Bldg.	ROY, EMILE	317 Wright Bldg.
HENLEY, M. D.	911 Medical Arts Bldg.	RUPRECHT, H. A.	604 South Cincinnati
HENRY, G. H.	801 Medical Arts Bldg.	RUPRECHT, MARCELIA	604 South Cincinnati
HOKE, C. C.	207 Philtower Bldg.	RUSHING, F. E.	505 Medical Arts Bldg.
HOOPER, J. A.	417 West Seventh St.	RUSSELL, G. R.	604 South Cincinnati
HOOVER, WILKIE D.	201 Philcade Bldg.	SEARLE, M. J.	202 Medical Arts Bldg.
HOTZ, CARL J.	604 South Cincinnati	SHEPARD, R. M.	306 Medical Arts Bldg.
HOUSER, M. A.	606 Beacon Life Bldg.	SHEPARD, S. C.	706 Medical Arts Bldg.
HUBER, WALTER A.	1113-14 Medical Arts Bldg.	SHERWOOD, R. G.	412 Wright Bldg.
HUDSON, MARGARET G.,	411 Medical Arts Bldg.	SHOWMAN, W. A.	409 Medical Arts Bldg.
HUDSON, DAVID V.	215 Medical Arts Bldg.	SHIPP, J. D.	Sisler Clinic
HUMPHREY, B. H.	Sperry	SIMPSON, CARL F.	502 Medical Arts Bldg.
HUTCHISON, A.	Bixby	SINCLAIR, F. D.	Springer Clinic
HYATT, EMRY G.	604 South Cincinnati	SIPPEL, M. E.	1542 East 15th St.
JACKSON, L. T.	206½ South Main	SISLER, WADE	807 South Elgin
JOHNSON, CHAS. D.	1117 Medical Arts Bldg.	SMITH, D. O.	604 South Cincinnati
JOHNSON, E. O.	206 Medical Arts Bldg.	SMITH, N. R.	703 Medical Arts Bldg.
JOHNSON, R. R.	Sand Springs	SMITH, ROY L.	809 Medical Arts Bldg.
JONES, W. M.	204 Medical Arts Bldg.	SMITH, R. N.	1017 Medical Arts Bldg.
JUSTICE, H. B.	303 Roberts Bldg.	SMITH, RONALD R.	403 Daniels Bldg.
KEMMERLY, H. P.	902 Medical Arts Bldg.	SMITH, W. O.	203 Philcade Bldg.
KRAMER, A. C.	415 Medical Arts Bldg.	SPANN, L. A.	305 Roberts Bldg.
LARRABEE, W. S.	411 Medical Arts Bldg.	SPRINGER, M. P.	604 South Cincinnati
LAWS, J. H.	Broken Arrow	STALLINGS, T. W.	724 South Elgin
LEE, J. K.	212-14 Medical Arts Bldg.	STANLEY, MONT V.	310 Ritz Bldg.
LeMASTER, D. W.	902 Medical Arts Bldg.		

STEVENSON, JAS.	615 Medical Arts Bldg.
STEWART, H. B.	2500 East 27th Place
STUART, FRANK A.	311 Medical Arts Bldg.
STUART, L. H.	1107 Medical Arts Bldg.
SUMMERS, C. S.	611 Daniels Bldg.
SWANSON, K. F.	Springer Clinic
TRAINOR, W. J.	1011 Medical Arts Bldg.
TURNBOW, W. R.	908 Medical Arts Bldg.
UNDERWOOD, D. J.	414-15 Medical Arts Bldg.
UNDERWOOD, F. L.	1001 Medical Arts Bldg.
VENABLE, S. C.	1135 South Quaker
WAINWRIGHT, A. G.	424 McBirney Bldg.
WALKER, W. A.	322 Kennedy Bldg.
WALLACE, J. E.	914 Medical Arts Bldg.
WALL, G. A.	902 Medical Arts Bldg.
WARD, B. W.	823 Wright Bldg.
WEST, T. H.	612 Medical Arts Bldg.
WHITE, N. STUART	416 Medical Arts Bldg.
WHITE, P. C.	312 Medical Arts Bldg.
WILEY, A. RAY	812 Medical Arts Bldg.
WITCHER, R. B.	910 Medical Arts Bldg.
WOODS, C. J.	511 Medical Arts Bldg.
WOODSON, FRED E.	908 Medical Arts Bldg.
ZINK, ROY	807 Daniels Bldg.

WAGONER

BATES, S. R.	Wagoner
PLUNKETT, J. H.	Wagoner
RIDDLE, H. K.	Coweta

WASHINGTON

ATHEY, J. V.	Bartlesville
BEECHWOOD, E. E.	Bartlesville
CHAMBERLIN, E. M.	Bartlesville
CRAWFORD, G. W.	Dewey
CRAWFORD, H. G.	Bartlesville
CRAWFORD, J. E.	Bartlesville
CRAWFORD, T. O.	Bartlesville
DORSHEIMER, G. V.	Dewey
ETTER, F. S.	Bartlesville
GREEN, O. I.	Bartlesville
HUDSON, L. D.	Dewey
KINGMAN, W. H.	Bartlesville
LeBLANC, WM.	Oceneida
PARKS, S. M.	Bartlesville
REWERTS, F. C.	Bartlesville
SHIPMAN, W. H.	Bartlesville
SMITH, J. G.	Bartlesville
SOMERVILLE, O. S.	Bartlesville
STAVES, B. F.	Bartlesville
TORREY, J. P.	Bartlesville
VANSANT, J. P.	Dewey
WEBER, H. C.	Bartlesville
WEBER, S. G.	Bartlesville
WELLS, C. J.	Bartlesville

WASHITA

BENNETT, D. W.	Sentinel
BUNGARDT, A. H.	Cordell

HARMS, J. H.	Cordell
JONES, J. PAUL	Dill
LIVINGSTON, L. G.	Cordell
McMURRAY, J. F.	Sentinel
NEAL, A. S.	Cordell
STOLL, A. A.	Foss
SULLIVAN, C. B.	Cordell
TRACY, C. M.	Sentinel
WEAVER, E. S.	Cordell
WEBER, A.	Bessie

WOODS

BENJEGERDES, THEODORE D.	Beaver
CLAPPER, E. P.	Waynoka
ENSOR, D. B.	Hopeton
GRANTHAM, ELIZABETH	Alva
HALE, ARTHUR E.	Alva
HALL, RAY L.	Waynoka
HAMMER, JOHN E.	Kiowa, Kans.
HUNT, ISAAC S.	Freedom
McGREW, EDWIN A.	Beaver
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SURGICAL PEDIATRICS*

GREGORY E. STANBRO, M.D.
OKLAHOMA CITY

This afternoon, we shall devote our entire time to surgical pediatrics. Almost ten per cent of all surgical cases occur in children and we should, therefore, develop a pediatric attitude when dealing with surgical problems of childhood. The child is a definite clinical entity and the surgical problems of that period are properly dependent upon the reactions and conditions associated with the childhood. The evaluation of surgery in childhood by referring to the same surgical undertaking in an adult is as unreasonable as the comparison of the adult's diet with that of an infant. We should recall the old and oft repeated adage of John Lovett Morse, "The child is not a little man," and not overlook the aphorism of Barrington Ward, "The adult may be treated safely as a child but the converse may lead to disaster."

In some respects the same surgical questions occur in children and adults while again there is a wide difference. The surgical problems of infancy and childhood deal mostly with congenital deformities and malformations which affect new and perhaps undeveloped organs or body systems; namely, harelip, pyloric stenosis, intussusception, spina bifida, hypospadias, etc. On the other hand, surgery when applied to the adult is usually directed to the repair or removal of old and worn out parts and the treatment of damaged organs as thyroidectomies, biliary tract disease, gastro-enterostomies, and malignancies.

Even though the surgical complaint be

the same, the reaction to that complaint may be entirely different in the child than the same pathological entity in the adult. The differences between children and adults are not only differences in size but there are definite anatomical, physiological, chemical, and neurological, variances. These diversities created the specialty, pediatrics, in a medical sense, but pediatrics in surgery has only recently been receiving special attention in this country. Even today there is not an up-to-date text book on the subject.

The normal infant has a chest and pelvis which are small compared with his large prominent abdomen. Within the abdomen, the liver occupies a large part of the peritoneal cavity, its size being one-eighth of the body weight at birth as compared with one thirty-second in the adult. A small undeveloped film-like omentum is picked up and the stomach which at birth is the size of an egg only holds an ounce. The caecum may not have rotated to the right and descended into the right iliac fossa. Only the terminal colon is in the pelvis and the bladder is a spindle-shaped organ located in the abdomen instead of the pelvis and even when empty is in direct contact with the abdominal wall. The obscure thymus gland reaches its maximum size the second year and developmental bone changes are progressive from infancy to beyond maturity. The foregoing are only a few of the structural variations in the infant and child.

The present physiological trend in general surgery is particularly applicable to

*Chairman's Address, Surgical Section, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

pediatric surgery, for during childhood the physiological processes are at their peak of development. Metabolism is increased as much as twenty per cent and, due to the rapid changes in body structure, this metabolism is also unstable and the child is more subject to violent reaction from slight cause. Consequently, most disease is sudden in onset and the symptoms are intense. When infection attacks a child, it is invading virgin territory and the reaction is general and affects the entire organism. This intense reaction does not localize early but there is a general reaction to even minor divergencies from the normal. The younger the child, the more apt are the signs and symptoms to be general constitutional expressions rather than local. Temperature control and the maintenance of the fluid reserve are essential. Loss of a pound a day, which is frequent, is not compatible with life in the child. Infants require more water per pound than adults, and when a child's weight loss is ten per cent, the outlook is serious and when that loss is twenty per cent, there is usually a fatal termination.

Surgical shock is therefore easily produced on account of the narrower water balance threshold. The fluid shift from the blood stream is not well tolerated and hemorrhage is poorly borne. The large amount of sugar stored in the liver, as glycogen, is soon used up, contributing to the production of acidosis, which may be caused by abnormal production, excessive retention, or faulty elimination of acids.

It is not that children do not stand surgery well, but they do not stand adult surgery well. Surgical problems and procedures in the child are consequently not the adjustment of principles and technique only. There is a complete change of attitude toward the organism as a whole, realizing that in childhood the symptoms are more acute, the reactions more severe, the metabolism more active, the chemistry unstable, and the margin of safety much narrower.

Congenital deformities and malformations permit deliberation in examination, diagnosis, and treatment, but acute surgical conditions demand early diagnosis, prompt treatment, and the time element is an even more important factor than

in the adult. In dealing with the child, we cannot discuss his complaint with him, but must observe his expression, his movements and posture. The history obtained from the mother may be more important than the physical findings, and anyone may find a rigid abdomen with a cold hand. Early symptoms in the child are not limited to any particular region as they are in the adult.

Acute onset with fever is frequent and digestive disturbances accompany most diseases. Critical observation, skillful examination, and keen judgment save valuable time, and the surgical procedure necessary may be carried out promptly.

In our enthusiasm to treat the surgical pathology diagnosed, we must remember that treatment of the individual is of first importance. This rule applies particularly to burns. Over half of the fatal burns in the United States occur in children under six, and the average age is three. A burn is primarily a sterile traumatic wound of varying depth, and should be looked upon and treated as such. The child should be placed on sterile sheets under a light cradle. There is a fluid shift of the plasma from the blood stream to the burned area, resulting in decrease in blood volume, concentration of erythrocytes, and the hemoglobin may reach thirty per cent above normal. The decreased blood volume and dehydration must be corrected by glucose and saline solutions given subcutaneously, intravenously and *per rectum*. Whole blood transfusions are very valuable. The foregoing having been carried out, the burned areas are treated with five per cent tannic acid solution which crusts over the burn, precipitates the hypothetical toxins and does away with the pain, suffering and traumatization of daily dressing. Real success is not, however, due to any particular drug or dressing but depends on the intelligent, ever watchful and persistent carrying out of an adequate program of general care. First, treat the organism as a whole, for the metabolic disturbances which are clinically wound shock, primary and secondary, and the succeeding toxæmia. Secondly, treat the primarily sterile wound or burned area itself.

Appendicitis, which will be considered in detail in a later paper, is the most com-

mon of all acute surgical diseases of the young. Early diagnosis is essential. Diffuse colicky pain, followed by nausea, with or without fever, should arouse our suspicions. The right lung and the right kidney should be proven not guilty before operating. Meckel's diverticulum may strangulate a loop of bowel, or ulcerate through the aberrant mucosa of its base, be wrongly diagnosed, and operated as appendicitis.

Pneumococcus peritonitis is usually operated as appendicitis when conservative treatment would have been the wiser procedure. Pneumococcus peritonitis usually occurs in girls, is slower in onset than appendicitis, and does not localize for many days. Diarrhea is more frequent than constipation, and there is severe abdominal pain with marked toxemia. The abdomen remains soft to palpation and there is definite tenderness on rectal examination. Conservative treatment and drainage of the localized abscess later is the treatment of choice, for the child is suffering from a septicaemia. Little is to be found at early operation. The peritoneal cavity cannot be drained, and nothing is gained by opening the abdomen.

Acute remittant abdominal cramps occurring in a child, usually under one year old, associated with a palpable abdominal mass, blood and mucus in the stools, no temperature, evidence of shock, and a soft abdomen, are diagnostic signs and symptoms of intussusception. Even though the diagnosis is not difficult and the intussusceptum often palpated *per rectum*, it is unusual to see a case the first few hours when prompt surgery is indicated and the prognosis good. Far too many are seen thirty-six, forty-eight and seventy-two hours after the onset when the opportune time for surgery has gone by and recovery is possible, but not probable.

Hernia should be mentioned if only to bring out the optimum time for surgical repair. It is almost impossible to keep an inguinal herniorrhaphy wound clean on a child under two years of age. Operation early is also more difficult on account of the delicate and small structures to which surgical trauma may do as much harm as good. Inguinal herniorrhaphy should, therefore, be avoided in the child under two,

and in the child under four it should be a short simple procedure. A short incision is made over the internal inguinal ring. The sac is located, ligated, excised, and the stump transfixed beneath the internal oblique muscle. Two or three interrupted sutures followed by the skin closure completes and cures the hernia. A compound tincture of benzoin dressing is more satisfactory, in the experience of the writer, than collodion in sealing the wound.

Pyloric stenosis has been studied extensively and treated both medically and surgically. Occuring in early infancy, the diagnosis rests upon spitting up of food shortly after birth, which becomes progressively worse until three or four weeks later, when the vomiting becomes projectile. The stools are now smaller and less frequent and the classical picture may show the peristalsis with ball-like waves across the abdomen. Palpation of the pyloric hypertrophy is not the diagnostic criterion, as it often cannot be palpated when the stomach is empty. Again, one should not wait for the pylorus to hypertrophy until it becomes palpable, for during the hypertrophy of the pylorus, the stomach is dilating, and its walls become thick in attempting to force food through the pylorus. Especially in these delayed cases do we see the undernourished dehydrated infant sent to the hospital in poor condition for surgery.

Here may be the opportune time to stress the importance of the acid-base equilibrium, not only in cases of pyloric stenosis but in all cases in infancy where there is vomiting. Remittent vomiting causes loss of hydrochloric acid in large amounts, and base chloride in less amounts. This loss is compensated by bicarbonate retention in the blood and tissue fluids, and the result is alkalosis of varying severity. This is as serious, or more so, than a shift of the acid-base balance to the acid side. The breathing becomes slow, shallow, depressed, and irregular, with long apnoeic pauses. Hypertonicity, carpopedal spasm, Chvostek's sign, and convulsions are diagnostic signs. Tetany may be produced and will contribute to the anhydraemia. The urine may be, and usually is, strongly acid on account of the low base carbonate. The presence of alkaline urine will rule out acidosis, but acid urine does

not rule out alkalosis in conditions associated with vomiting. Death may occur promptly as a result of collapse, respiratory cessation, or generalized convulsions. Restoration of the acid-base equilibrium must therefore be restored before surgery and we must remember that alkalosis accompanies vomiting invariably where gastro-intestinal obstruction is present.

The Fredet-Rammstedt operation for pyloric stenosis may be performed under local anaesthesia. The three operative bugaboos are: hemorrhage at the cardiac end of the pylorus, penetration of the lumen at the distal end, and evisceration. The incision through the hypertrophied pylorus may be made with a blunt instrument, thereby avoiding penetration of the bowel lumen. Unusual care in closing the abdominal incision and the use of interrupted silk sutures prevent evisceration. Post-operative management is fully as important as pre-operative care and should be in charge of a pediatrician. Feedings begin three to six hours following operation. Close cooperation between the pediatrician, the surgeon and the nursing staff will reduce the dangers of surgery in infancy.

Thoracic empyema is a frequent problem. In children empyema demands more acute attention than in the adult. The age of the child, the etiological organism and the virulence of that organism are definite factors. The infection attacks a non-resisting pleura, which is slow to form adhesions and localize the infection. The pleura does not thicken rapidly and the mediastinum remains mobile. Open drainage with resulting pneumothorax is therefore contraindicated. By the use of aspiration and closed drainage, rapid sterilization and obliteration of the empyema cavity is attempted. Prevention of chronic empyema is constantly kept in mind. When the pus becomes thick and the general condition permits, open drainage may be instituted and daily irrigation with Dakin's solution ordered.

Another acute surgical problem still frequently undiagnosed is acute osteomyelitis. Most cases are treated as rheumatism. Its seriousness cannot be exaggerated. Septicaemia and death may follow in rapid succession. Etiologically, trauma is a factor and frequently provides the location

for blood born infection, the portal of entrance being elsewhere. Acute pain and tenderness near a joint in the presence of fever should arouse one's suspicions. The blood picture is helpful but x-ray findings are of no value during the acute stage. The earlier diagnosis and drainage is carried out the better. Hours may make a difference of weeks or months in the period of convalescence. Drain and immobilize promptly, and the morbidity and mortality will be sharply reduced.

During the consideration of the surgical problems in childhood, we should remember always the possibility of the child being a diabetic. Diabetic children are living. Each year increasing thousands of diabetic children are living in all of whom any surgical problem may present itself. Diabetes is one hundred per cent hereditary. Any operation may be performed on a diabetic child if Joslin's three diabetic horses—diet, exercise and insulin—are properly managed. Remember that infection reduces the potency of insulin seventy-five per cent, and *with* infection, dehydration, acidosis, coma and death may follow in rapid succession. Avoid hypoglycaemia. Give too little insulin before the operation rather than too much. Examination of the urine for acetone should be a routine pre-operative procedure. If no acetone is found, there is no diacetic acid present. The administration of soda bicarbonate is dangerous. The use of glucose buffered by insulin is much wiser. With recognition and control of the diabetes before and during the operation, surgery in the diabetic child is not contraindicated.

Successful results in surgical pediatrics are largely dependent upon the first physician who sees the patient. Prompt recognition of the surgical condition, and complete medical and surgical cooperation in carrying out the appropriate treatment are essential to success.

200 MORE IN 1937

There are at least two hundred more men in the state eligible for membership in our Association. Let's make members of them during 1937.

Bilateral Acute Mastoiditis With Many Complications—Recovery*

MARVIN D. HENLEY, M.D.

TULSA

The unusualness of this case and the tremendous recuperative powers of a desperately sick child tend to make this a most interesting report. The family doctor had seen this child the day previous to his admittance to the hospital. I was called in consultation the evening of the day of his admittance to the hospital. This was a private patient.

Case Number 51538: The patient was a white boy, age eight, quite anemic in appearance, very undernourished, very underdeveloped, admitted to the hospital May 23, 1936. He had the appearance of being very acutely ill. He gave a history of having had a purulent discharge from both ears for two weeks before coming to the hospital—the ears rupturing spontaneously. Twenty-four hours before coming to the hospital he suddenly became worse, with a rigor and chills, and temperature swinging very high (106). The past history as well as the family history were essentially negative. Physical examination at the time of admittance showed both ears profusely discharging a purulent substance; extremely tender behind both ears, but particularly the left; posterior walls of the external auditory canals sagging; tenderness along the path of both sterno-cleido-mastoid muscles; neck stiff enough to raise the patient off the bed by lifting in the region of the occipital bone; throat enlarged and infected tonsils, apparently acutely inflamed; twenty-four hours after admittance, the left ankle became extremely red, tender and swollen.

Laboratory report of the mastoid regions at this time read: "The x-ray reveals complete obliteration of the mastoid cells on the left side through a rather dense shadow indicating the presence of an acute infection as found in acute mastoiditis. The

mastoid cells on the right side are also somewhat lacking in transparency with the suspicion of the involvement of the mastoid cells on the right side as well."

Throat culture negative; repeated smears for malaria negative; blood culture staphylococcus; spinal fluid clear under slight pressure and cell count low; Wasserman negative; urinalysis negative; W. B. C. 16,500 with one eosinophil, one juvenile, twenty-six stabs, seventy segments, twenty lymphocytes; R. B. C. 2,630,000; hemoglobin forty-eight per cent.

The child was critically ill—so no operative procedures were instigated at the time because of the extremely poor surgical risk. May 26, 1936, another W. B. C. was done. It showed: W. B. C. 12,100 with nine stabs, eighty-one segments and ten lymphocytes, indicating an increasing gravity of the condition. By this time both ankles were swollen, red and tender. May 28, 1936, two hundred five cc. of whole blood was given by transfusion. June 1, 1936, there were W. B. C. 25,350 with five juveniles, ten stabs, sixty-five segments and twenty lymphocytes, indicating a show of resistance of the body to the infection. June 5, 1936, three hundred sixty cc. of whole blood was given by transfusion. June 7, 1936, W. B. C. were 12,500 with one myelocyte, three juveniles, twelve stabs, seventy-one segments and fourteen lymphocytes, which to us indicated an absence of reaction to the transfusion or an increased amount of infection. On June 9, 1936, there was two hundred ten cc. and on June 16, 1936, four hundred fifty-five cc. of whole blood given by transfusion. June 20, 1936, W. B. C. were 25,100 with three juveniles, ten stabs, sixty-nine segments and eleven lymphocytes. June 25, 1936, three hundred eighty-five cc. of whole blood was given by transfusion. July 6, 1936, W. B. C. were 32,450 with one eosinophil, seventy-six segments, twenty-one

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 12, 1937.

lymphocytes and two monocytes. He was so much improved clinically that no other blood transfusion was given and on July 22, 1936, the W. B. C. was 28,200 with one basophil, two eosinophil, three juveniles, fifteen stabs, sixty segments and twenty lymphocytes. The hemoglobin at this time was eighty-five per cent and R. B. C. 4,640,000. Daily temperature during this interval ranged from 97 to 106.4 with daily chills. By July 7, 1936 the temperature had gradually fallen until the fluctuation was between 96 and 100 degrees daily.

During this period of about forty-five days he had multiple abscesses formed and opened and drained, starting as before mentioned with the ankles. His extremities during this time had become so drawn that he was unable to turn in bed or feed himself. He continued to take nourishment well from the time he entered the hospital. Pus cultured from the various abscesses showed the same staphylococcus. An autogenous vaccine was prepared and given with questionable results.

Along the last part of August, 1936, he began to run practically normal temperature. Blood counts were done during this interval and they were all about the same as the one of September 17, 1936, which showed W. B. C. of 16,600 with three eosinophils, sixty segments and thirty-seven lymphocytes; R. B. C. 4,213,000 with eighty-one per cent hemoglobin. A report from the x-ray laboratory September 4, 1936, read: "The x-ray reveals a dislocation of the left femur upward and backward and with evidence of shrinkage and sclerosis of the acetabular cavity. This dislocation is of long standing." The joints involved had received light therapy and short wave diathermy for several weeks previous to this. Under general anaesthesia and avertin an orthopedist on September 25, 1936, manipulated the left hip and applied a hip cast. The short wave diathermy was continued. A report from the x-ray laboratory October 2, 1936, read: "The stereogram of the left hip joint reveals the head of the femur to be in the acetabular cavity at right angles. The head shows some signs of absence." November 27, 1936, the W. B. C. was 11,000 with four stabs, fifty-one segments, thirty-nine lymphocytes and three monocytes. A report from the x-ray laboratory Novem-

ber 27, 1936, read: "A. P. view of the left hip joint, in cast. The hip joint appears to be in perfect position at this examination." December 4, 1936, under general anaesthesia the left leg was put in twenty-five degree flexion and twenty-five degree abduction in cast and the tonsils and adenoids removed. A report from the x-ray laboratory December 7, 1936, read: "The x-ray reveals the head to be yet in normal position. The head of the femur lies in the acetabular cavity." There was a microscopic examination made of the tonsils by the pathologist. His diagnosis was chronic tonsillitis. The orthopedic surgeon later removed the cast and applied a brace to the left leg. This child undoubtedly had an acute tonsillitis, a bilateral suppurative otitis media, a double acute mastoiditis (unoperated), a meningeal irritation, a bilateral sinus thrombosis, a generalized septicemia, an acute arthritis, a secondary anemia and a dislocation of the left hip.

This was the type of case that came from a family in very moderate or less circumstances, and one that the attending doctor would like to get out of the hospital as soon as possible to alleviate the financial burden on the family. When it was seen that this would not be possible the patient was transferred to the Crippled Children's division of the hospital. During the last few months of 1936 he was in and out of the hospital and to the Junior League Convalescent Home for crippled children. At the present time he is at the Crippled Children's Home walking, playing and carrying on a practically normal existence. It is true he is still wearing a brace on the left leg but the orthopedic surgeon assures us that this will soon be removed. He is expected to be discharged from the Crippled Children's Home on any day now.

Summer Diarrhea in Babies

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the twenty-four-hour formula and replaced with eight level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextrin-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

Operative Procedures of the Nose for Cosmetic Purposes*

CURT VON WEDEL, M.D.
OKLAHOMA CITY

As stated in the title of this paper, it is my wish to show today a few procedures which are done under local anesthesia, but which should not be done outside of a hospital except by one who has a well organized operating department associated with his clinic or office.

These procedures are all done with novocaine and adrenlin. We never use over twenty cc. and usually ten cc. of the solution is sufficient. These cases should all be free of colds, should have no breakfast, should have adequate rest the night before, and one-half hour preceding surgery should have a quarter grain of morphine. All the hairs within the nose should be carefully clipped and the nose very carefully washed with soap and water the night before, particularly to remove all sebaceous secretions. The patient should be made as comfortable as possible on the operating table with a soft pad or air cushion. The hair should be carefully protected by a towel firmly attached with adhesive plaster. It is immaterial what type of preparation is used. In New York the men are using merthiolate. Personally, I use nothing but alcohol, as iodine, mercurochrome, merthiolate, etc., leave a temporary staining which is rather disagreeable to the patient.

This work which I am showing you today, except for a few modifications, particularly associated with saddle noses, which will be mentioned as we go along, is primarily the work of Joseph of Berlin.

The first type which we will discuss today, is that type which may be classified as the "hump nose," with or without a broadened base and with or without an elongated tip and broadened ala; namely, the so-called Semitic nose. One of course sees many modifications of this type of

nose. Some patients have a big bony hump and a small cartilagenous hump; some have a small bony hump and a large cartilagenous hump; some have a marked elongated nose, while others have a broad base with a very thick and broadened tip. I am going to discuss in simple language the surgical procedure for the extreme type. This nose has a bad bony hump associated with a bad cartilagenous hump and broadened base. It is too long and at the same time has a broad ugly tip. Any of these steps can be modified to fit the particular nose in question.

Let us assume then, that we have one of these marked exaggerated Semitic types of nose.

A mask should be made of this patient. Pictures are taken in three directions. The patient should be studied in profile as well as in the direct view. The nose should be split down through the center, on the mask, and one side of the mask should be cut down to the exact size that we wish to make this nose. This should be shown to the patient and an agreement reached as to the exact type of nose we wish to secure. At this point I wish to emphasize this fact—do not try to be too radical, as a person with a very large nose would not look well with a little tiny nose. One must use careful judgment not to make too great a change in the nose. Then, having decided on what we want to do and the patient having been prepared, using a very fine needle we inject a few drops of novocaine containing twenty drops of adrenlin inside the nose just above the ala cartilage. We then explain to the patient that her heart probably will pound a little because of the medicine we are injecting. We then, being careful not to use too much solution, inject above and below the ala cartilage. Then with a clean, very fine (26) needle, we go to the outside of the nose and in-

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ject a small amount, thoroughly infiltrating the nose as high as the gabella and well down to the maxilla on each side. The tip is then injected as well as the columella. We use a small amount of solution containing usually twenty drops of adrenlin to the ounce. This causes blanching and is not absolutely free of danger from a standpoint of sloughing. For the beginner it may be better to use a larger amount of solution and less adrenlin. Bleeding with this amount is practically negligible. Using a small amount of five per cent cocaine, one applicator is put high in the nose and the other low in the nose, on both sides, so that the mucous membrane is practically deadened. One does not have to do this but it does make the patient more comfortable and the little sputtering and irritation that occurs with the placing of the applicators is justified because of the future ease.

INSTRUMENTS

We use Joseph's instruments as shown on the table before you and in the slides.

OPERATIVE PROCEDURE

Using a flexible retractor the right nostril is elevated, the junction of the ala to the nasal cartilage is found and a bisty pushed in. Using a sliding free motion the entire skin is elevated on the right side of the nose. This same procedure is followed on the opposite side. After the skin is completely elevated, a periosteal elevator is used, and the periosteum is elevated from the nasal bones and the nasal bones completely freed. A blunt pointed bisty is then pushed through both openings from the left to the right, carried downward towards the tip, the septum is severed from the ala cartilage and incision is carried down behind the columella cartilage to the spine, freeing the whole nose. There will be no bleeding if your injection has been proper, and absolutely no pain. A little nicety of technique is to cover the mouth with two layers of wet gauze, held in place with the weight of two Allis forceps. This is not necessary, but allows the patient free breathing, free air way, and takes away apprehension. A straight angle saw is then gently put through the opening and with a few rapid strokes the bony hump is cut through on the left, sawing towards the right. We then turn over to the right side and completely sever the bony hump.

Then with a blunt pointed bisty the cartilagenous hump is cut away, straight down from the nasal cartilage, and the hump intact is lifted out. A file is then placed within the nose and any irregular or ragged edges are filed away. We are then aware that we have an over abundance of nasal cartilage, so a "V" shaped piece is cut away from either side. This is a simple procedure, but one which was the most difficult portion of this operation for me to acquaint myself with, and it was because I did not understand what was going on. I am therefore illustrating this for you, both in the pictures, and by using scissors and a piece of paper.

We are now ready to shorten the nose:

The tip is dislocated to one side and with a heavy scissors we cut away as much of the septum as we feel we should, cutting a small amount away each time until we find out exactly how much we wish removed. Do not get the nose too short. However, I wish to say that it is seldom that one gets the nose too short. Having shortened the septum we now must fix the columella cartilage to the septum and this is done by two sutures of linen placed through the columella cartilage and septum and tied snugly. One can elevate or depress the tip of the nose fully one-half inch by this procedure and by trying it out one knows exactly where one wishes to place the tip of the nose. This is one of the most important steps. If these sutures are correctly placed the nose will be perfectly straight. These sutures, by the way, are the only sutures that are necessary to be placed, and they should remain in situ five to seven days.

We are now ready to narrow the nose:

A small incision is made just above the columella cartilage very close to the maxilla, a small bisty is pushed forward, separating the skin, and then a right angled elevator is used, elevating the periosteum. A right angled saw is then placed in this opening and the tip of the saw must be as high as possible, well up into the corner of the eye, and with a very rapid motion, the upper portion of the bone is sawed through. First the nasal bone and then the spine of the maxilla is cut through. One feels a peculiar little jar as the saw goes through. This procedure is repeated on the

opposite side, and then the nasal bones are completely broken free from their attachments and crushed inward. If one does not cut the mucous membrane, and one should not, they automatically assume the proper position just as the closing of two doors which meet.

We are now confronted with making the tip smaller:

The columella cartilage already has been separated from the nasal cartilage in our first incision. A little novocaine is now injected around the edge of the ala, an incision is made just within the border of the ala and along the angle. This is Safian's modified method and is much better than the Joseph method. The ala cartilage is now incised along the lower margin of the ala and along the nasal edge as shown in the accompanying slide. It is carefully separated from the skin and it is dislocated outside of the nose. The necessary amount is cut away from the inner and upper portion, and it is pushed back. One can immediately see, by the contour of the nose, whether enough has been taken away and if not, more can be taken away. One sees immediately how nice the side of the nose looks, and adjusts itself. The same procedure is done on the opposite side.

In the meantime, if there is any little bleeding the patient from time to time is allowed to spit it up and if it so happens, and it occasionally does, that she becomes sick from morphine, she is allowed to vomit and empty her stomach. A sterile basin should always be at hand.

The nose is now carefully cleaned inside and lightly packed with vaseline impregnated Kephrene gauze. Two straps of adhesive plaster are attached over the tip so as to hold it in place, and one broad piece is attached to the nose and carried up on the forehead to hold the skin in its new position. A mold is made from dental compound. The compound is softened by putting it in hot water, and then this soft mass is placed on a piece of flannel and a cast of the exact size of the nose is made. The cast is tightly strapped in place. It is better than any other means of fixation. It allows for swelling, still maintains constant pressure, and allows the patient to see. The patient is then put to bed and that evening a small dose of morphine is given

for quiet particularly. The following day the pack is removed, the nose cleaned out with peroxide and Dakin solution, and a little sterile vaseline placed within the nostril so as to keep secretions soft. The adhesive tape is readjusted and the cast is readjusted. We keep this on for about four or five days. After that we have the patient wear either a Joseph or a Safian brace for four or five days, depending on the extent of our operation. In the most extreme cases, if properly done, properly injected and proper pressure is applied, they will be able to return to their duties in two weeks without any internal or external appearance of having been operated on. By that time the black and blue has all disappeared and all the swelling has gone. Depending on the extent of the case, we feel that a complete end result is obtained in from five to fourteen days.

The saddle nose, non-syphilitic, with no destruction of the lining: These are usually the result of accident. Occasionally they follow infection with destruction of the cartilage.

A cast of the face is made and the defect on the cast is filled with artist putty. Then, using dental compound, a mold is made which will exactly fill the defect. This is put in bichloride to sterilize and preserve it until we are ready to operate the patient.

OPERATIVE PROCEDURE

Incision is made just above the ala cartilage using bistury and scissors and the skin is very carefully elevated. It is usually best to open up the nose on both sides. The mold that had previously been made is placed in this defect to see just how big we wish to make our cartilage which is to be implanted in this defect. If the mold does not fit exactly it is molded until it does. Pressure is applied to the nose. New gloves and fresh instruments are used and a small incision is made over the costal cartilages, following injection with novocaine, by either using Kelly's grooved chisel or dissecting the cartilage out in mass. Bleeding points are all controlled and wound closed very carefully. Then this piece of cartilage is cut to just the exact size and shape of the mold. Any excess cartilage that we may have is put away in five per cent merthiolate solution

and kept in the ice box—we can keep this for a year or longer in this manner and use it for cases from which we can not obtain cartilage. The piece of cartilage is cut to the exact size and shape of the mold, is then slipped in the incision above the triangle cartilage of the nose and below the skin. It should fit exactly and completely and evenly fill the defect. Incisions in the nose are then carefully closed with interrupted horse hair. The nose is gently packed and the pressure mold of dental compound on flannel made and applied. This mold holds the piece of cartilage in situ for about four days. Then all dressings may be taken away and stitches removed. The patient should be able to go about his or her business in a week. Whenever we take a complete cartilage the chest is tightly strapped and this strapping is maintained for a week. This sometimes is slightly painful but not nearly as painful as one would imagine. Patients as a rule do not complain much about it.

The third type of nose—the bulbous or Biford type:

The tip of the nose and the ala cartilage are infiltrated with about five cc. of novocaine containing fifteen to twenty drops of adrenalin. The columella cartilage is severed from the septum. The tissue lying be-

tween the two columella cartilages is removed, the columella cartilages cut on each side and a stitch is taken holding the cartilage together. The rest of the cartilage, on either side, is completely separated, detaching it from the triangle cartilage above, and from the edge of the ala below, leaving it only attached externally. We then trim it—using scissors one can trim it to any desired shape. It flies back of its own accord and needs no suturing. The nose is carefully and lightly packed. A strip of adhesive is applied over the nostrils to keep the pack in, and another one over the top of the nose to cause the skin to come in contact with the remaining portion of the columella cartilage.

There are, of course, many types of noses. Some, even though they are not what one would call good looking noses, fit perfectly in some faces. Other fairly good looking noses, fit most imperfectly. One should use a great deal of caution and thought before one decides to change a nose. At present however there is absolutely no danger, and quite outstanding results can be obtained. An inferiority complex, which often is associated with nasal disfigurement, may be very great. With simple operative procedures you may change one's entire viewpoint in life and leave him very, very happy.

Hyperpyrexia as a Therapeutic Measure*

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TULSA

Hyperpyrexia is not new. In ancient times hot baths were used in treatment of various diseases. Three thousand years ago Homer described the action of hot baths, especially in states of exhaustion. Practically all ancient races used hot baths in treatment of acute and chronic infections. In Europe in the sixteenth century, people began to fear bath houses because of the dirt, filth, and the rapid spread of syphilis, but later it gradually revived in the form of Russian and Turkish baths.

In Japan between 1688 and 1704 Balneotherapy was first introduced. These were hot waters from volcanic springs. Their temperatures were raised to one hundred two and one hundred four degrees. The treatment usually consisted of about one hundred twenty baths over a period of four or five weeks. Marked curative effects were reported in all forms of syphilis, acute genito-urinary diseases, nervous disorders and other diseases.

In modern times we have much experimental data concerning the effect of temperature on syphilis. This work began in

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1919 by Weichbrodt¹ and Jahnel,² Schomberg and Iseng, Walinski and others. Weyman and Osborne³ in September, 1929, published the first preliminary report on raising temperature by diathermy. Their first patients were dementia praecox. Several methods are used and recommended to raise temperature such as tuberculin, sterile milk, sodium nucleate, typhoid vaccine, malaria and others.

There is a broad field today, which is only in its infancy. It is growing fast, however. This field of therapy is now called physical therapy. I know that there is a great deal of confusion in some medical minds as to its uses and indications. The attitude toward physical therapy varies with one's knowledge of the subject, one's environment, and contact with a well regulated department. For example, we know hydrotherapy has been used for a long time in nervous disorders and acute febrile states. There is widespread use of diathermy in pneumonia—for relief of pain, if for nothing else; ultra-violet rays in erysipelas, short wave diathermy in deep-seated abscesses.

In this paper I shall deal with only one small division of physical therapy, that is, hyperpyrexia (fever therapy) as produced by diathermy. This has no reference to inductotherm or radiotherm or short wave therapy, because it still is in the experimental state, and this mode of action is individual.

I shall report a small series of cases treated by diathermy in St. John's Hospital. But first, I should like to give you a brief summary of electrical currents as produced by diathermy.⁴ "The effect of an electric current when applied to a living tissue may be thermal, chemical or mechanical or a combination in nature, depending on the physical character of the current. An electric current that flows continuously in one direction is a direct current. If it flows alternately, back and forth through the conductor, it is alternating. The number of times the current passes through a complete cycle of forward and backward motions is the frequency. High frequency currents as generated by diathermy, have a frequency ranging from several hundred thousand to several million cycles per second. The

majority of machines deliver from two hundred thousand to three million cycles per second. The object of these high frequencies is to prevent neuro-muscular response. The only immediate and direct effect of traversing living tissue by high frequency current is the generation of heat. Therefore, physiologic effects resulting from diathermy must be dependent on heat produced in the tissues.

"The flow of an alternating current through an electrolyte (as tissue) depends not only on ohmic resistance, but upon the capacity of the electrolyte. The ohmic resistance of an electrical system such as an electrolyte decreases with increase in frequency of the heating current. This decrease in the equivalent series resistance of an electrolyte is of such magnitude in comparison with the concurrent increase in current flow, that the heating will be constant for all frequencies within reasonable limits, provided the voltage impressed on the electrolyte is constant for the frequencies considered.

"Some have said that high frequency currents do not pass through tissue because of skin effects. The term 'skin effects' has no anatomic connotation, but refers to non-uniform distribution of current flowing through metallic conductor. As the frequency is increased the currents tend to flow in great concentration near the outer part of the metal conductor. Skin effect is of importance in metallic conductors, but negligible for electrolytes, and hence for tissues, because of their high resistivity in comparison with copper and other metals. The higher the frequency, the lower the effective resistance of the epidermis and consequently the lower the heat generated therein. It has not yet been determined at what frequency the heat produced in epidermis becomes negligible in comparison with heat produced in deep lying tissues. The skin under the smaller electrode and tissues just below the skin are usually heated to higher temperatures during a diathermy treatment. The heating of the epidermis may be taken as a measure of the amount of current that can be safely administered. With very high frequencies this, however, may be unsafe, because of tendency to heat deep tissues more than superficial."

The diseases for which this treatment of hyperpyrexia may be used are paresis, tabes, parkinsonia, multiple sclerosis, asthma, chronic arthritis and many others.

The physiological effects of the treatment are:⁵

1. Loss of weight, even though a large amount of fluids are consumed;
2. Increase of R. B. C., W. B. C. and hemoglobin;
3. Slight increase of polymorphonuclears and eosinophiles. These return to normal in twenty-four to forty-eight hours.

Blood chemistry shows an increase in:

1. N. P. N. and uric acid.
 2. Blood chloride and calcium in sera.
- CO² capacity of plasma decreases.

Others have different results because of variation in temperature rises. Pulse and respiration are increased in proportion to temperature. As to the blood pressure—the systolic rises; the diastolic drops, due to peripheral dilatation. Later, the blood pressure remains lower.

J. D. Cameron⁶ reports in an article his findings:

The blood pressure is variable.

Raised are the:

1. Alkaline reserve plasma (Van Slyke CO²);
2. Cholesterol, plasma;
3. Hemoglobin, whole blood;
4. Sugar, whole blood;
5. Lecithitin serum;
6. R. B. C., and especially total W. B. C.

Lowered are the:

1. Protein serum (fractions not given);
2. Total nitrogen, serum;
3. Potassium, serum;
4. Chloride, whole blood.

There is no change in calcium, amino nitrogen, Bilirubin. The serum shows practically no change.

In examination of the urine, the substances that are increased are:

1. Specific gravity;
2. P. H. slight;
3. Free acid;

4. Combined acid;
5. Chloride;
6. Urea.

In his conclusion, Cameron believes this to be a sympathetic stimulation. The ones with high alkali reserve do badly, while those toward acid do better, that is, the more vagotonic.

The technique will not be considered in this paper. Hyperpyrexia is not without danger, as a few cases of heat exhaustion and death have been reported. With each case, it is an individual study as to tolerance to fever and the changes which take place in the cellular and chemical structure. From our experiences, I do not believe that any number of treatments can be specified for a course, or to raise the temperature to a certain range to be applied to every case. It should be used only in hospitals by experienced operators, who can recognize symptoms and know the ways of avoiding danger. Contra-indications are:

1. Advanced age (sixty as arbitrary limit, with exception);
2. Cardiac and renal insufficiency;
3. Rheumatic endocarditis;
4. Aortic aneurysm;
5. Advanced arterio-sclerosis;
6. Pulmonary tuberculosis;
7. Diabetes;
8. Late neuro-syphilis with complete dementia.

We began this work in 1931, when we had little previous work to follow as to the dangers, indications and contra-indications. Consequently, all treatments were watched closely and followed by the laboratory. A great deal of laboratory work was done, not only for information as to any changes that might take place, but also to try to determine a single test which could be done in order to know when to stop treatment or to begin again. In our work we found we could rely best on the sedimentation test. Others follow different tests. Dr. Kenneth Phillip and others depend on titration of urinary acidity in their studies of hyperpyrexia in bronchial asthma.

Case No. 1. H. R. F., age forty-two, a barber, April 14, 1931. Multiple arthritis.

His condition began in March, 1927, with pain in the right shoulder, which gradually developed into soreness and stiffness. Six weeks later it began in the left elbow, following which all the joints gradually became involved. The hands were the last to become involved. The patient took one hundred baths in Hot Springs, from which he obtained a great deal of relief. He was able to work from June, 1928, to July, 1929, In August, 1929, the patient had an acute appendix which was removed. He had had a tonsillectomy in 1925, and in 1926 all but six teeth had been removed for pyorrhea. In 1928 those remaining were removed. In 1930 the patient had pneumonia. Since February, 1930, he has not been on his feet, but in bed. From December, 1930, to February, 1931, he has been unable to move himself in bed or to feed himself. Examination is essentially negative except for the joints. Temperature is 98.6. Pulse ninety; respiration twenty-four. The hands and wrists are markedly swollen, especially at the joints. Little fingers are ankylosed. There is marked crepitation in the joints that can be moved. Motion causes extreme pain. The knees, elbows and shoulders are swollen and tender. The hips are tender. The neck is stiff and the spine

rigid. The patient is unable to move any joint voluntarily. Mastication is difficult on account of pain.

He had been treated with everything—numerous types of vaccines and antigens; hot baths; salicylates, cincophen and others, but his condition was gradually growing worse. We decided to use hyperpyrexia.

Case No. 2. L. McK., age thirty-one, married, clerk, February 3, 1932. The condition began with pain in the small of his back, occurring about four or five o'clock in the morning. The patient would have to sit up for several minutes, then return to bed and go to sleep. Later, the entire back became stiff and he could not bend over. In November, 1930, the left hip became stiff and painful, and he stooped and limped in walking. He worked until June, 1931—after that staying at home, up and about until August, 1931, when he went to bed. The knees, ankles, neck and shoulders have become involved. The ankles and shoulders are less stiff and painful than the other joints.

The patient had frequent sore throats until tonsillectomy eight years ago. No other illness. One brother had rheumatism

CASE No. 1—H. R. F.

Date 1931	Blood Sugar	Blood Urea	Ref. Index.	Vis.	R.B.C.	Cell Vol.	Corp. Vol.	Sed. Rate	Hb.	Corp. Hb.
4-16 AM	84.7	13.4	1.3496	1.92	3.8			50	11.8	
PM	98.5	14.4	1.3540	2.20				65		
4-20 AM	89.3	11.8	1.3500	1.70	3.2	40.0	124	40	10.1	31.5
PM	79.6	11.4	1.3512	2.00	4.9	40.0	100	40	13.5	27.5
4-24 AM	80.0	10.9	1.3490	1.85	3.6	36.5	103	45	11.8	
PM	99.5	11.5	1.3520	2.00	4.0	38.0	107	50	11.8	
4-27 AM	73.5	10.1	1.3520	2.00	4.1	35.0	87.8	60	13.5	
PM	132.4	11.7	1.3500	1.95	4.8	41.0	89.7	55	13.2	
5-2 AM	94.3	9.0	1.3490	1.80	4.6	46.6	100	65	14.4	
PM	141.8	13.4	1.3518	2.00	4.2	43.5	103	70	13.5	
5-5 AM	89.5	9.7			4.4	36.3	82	65	14.4	
PM	112.3	14.4			5.0	40.4	81	70	15.2	
5-18 AM	85.8	11.4	1.3480	1.90	4.8	39.4	88	75	15.2	
5-20 AM	87.8	11.3	1.3480	1.80	5.0	40.4	81.5	70	16.0	
PM	135.1	17.3	1.3552	bact	5.4	46.6	85	65	16.9	
5-27 AM	94.3	10.5			4.8	39.4	81	63	15.2	
PM	104.1	14.1	bact		5.2	45.6	89	40	16.9	
6-23 AM	84.4	17.4			3.9	38.4	98	90	11.8	
PM	129.0	26.1	1.3568	2.70				22		
Treatment discontinued.										
10-21 AM	86.2	13.9	1.3510	1.90	4.2	42.5	100	70	13.5	
"Walked" in for blood tests.										

SUMMARY: In this patient, there was marked improvement. He was able to be up, dress himself, and drive a car. However, he was not able to return to work as a barber. At the treatment on June 23, 1931, there was a marked drop in sedimentation rate, and he did badly during this treatment, so they were stopped.

six months. Examination shows the patient to be undernourished, lying in bed, unable to move without effort. Movements are slow. The back is stiff. Temperature 98; pulse 100; respiration 20; blood pressure 118 78. There is moderate arcus senilis. There is a marked wasting of the lower extremities with muscle weakness. The knees show a hypertrophic enlargement, motion limited to sixty degrees and very painful. Ankles are negative. Marked stiffness of cervical vertebrae and all other vertebrae is noted. This patient had been treated since the onset with everything, but the disease was progressively worse. Hyperpyrexia was used.

Mrs. E. B. G., age forty, lancinating pains in both feet, knees, wrists. Diagnosis of multiple neuritis, present about one

year. Sedimentation rate is six hours with a maximum temperature of one hundred five degrees. After one treatment pains entirely relieved. She felt well and did not return.

In conclusion, I have presented a small series of cases treated with hyperpyrexia. I believe it of great value in our armamentarium of treatment.

I have shown eight cases of chronic arthritis with definite improvement in seven. How long they will continue the improvement, I do not know. We have obtained improvement in six of eight present in C. N. S. lues.

I believe that the sedimentation rate is a good guide. We have not given any that were below twenty-five minutes. The single case of multiple neuritis and dissemi-

CASE No. 2—L. McK.

Date 1931	Blood Sugar	Blood Urea	Ref. Index.	Vis.	R.B.C.	Cell Vol.	Corp. Vol.	Sed. Test	Hb.	Corp. Hb.
2-5 AM	91.7	13.5	1.3550	3.10	4.4	36.3	89.0	18	13.52	30.5
PM	120.5	14.8	1.3540	2.65	3.7	39.4	99.0	15	11.83	32.1
2-6 AM	85.1	16.4	1.3527	2.45	4.5	39.4	87.8	12	12.68	28.3
2-8 AM	98.5	12.7	1.3540	2.45	4.2	36.3	86.5	12	13.52	32.2
PM	101.5	12.6	1.3540	2.50	4.3	37.4	87.3	10	13.52	31.6
2-9 AM	98.5	13.2	1.3528	2.45	3.7	36.3	98.3	12	11.83	32.0
2-15 AM	96.1	11.8	1.3530	2.60	4.2	38.4	90.8	18	11.83	28.0
PM	72.2	18.3	1.3535	2.65	4.5	39.4	88.5	11	13.52	30.3
2-16 AM	89.2	12.3	1.3530	2.65	4.3	40.5	90.5	12	12.68	29.3
2-18 AM	94.8	11.7	1.3500	2.40	4.0	35.3	88.0	13	12.68	31.6
PM	183.5	11.1	1.3510	2.35	4.0	34.3	85.6	14	12.68	31.7
2-19 AM	84.4	11.2	1.3510	2.35	4.2	32.3	77.2	13	13.52	32.1
2-22 AM	91.7	10.2	1.3510	2.35	3.9	35.2	90.0	17	12.68	31.3
PM	185.1	9.1	1.3518	2.50	4.2	36.3	86.5	12	12.60	30.2
2-23 AM	81.9	11.3	1.3510	2.30	4.0	35.2	87.1	13	12.68	31.2
2-26 AM	92.3	9.7	1.3500	2.10	4.0	28.1	71.0	15	12.68	32.0
PM	105.3	10.2	1.3510	2.35	3.9	33.2	85.4	14	12.68	32.6
2-27 AM	89.7	11.1	1.3500	2.15	4.0	33.2	83.3	10	12.68	31.7
2-29 AM	96.7	10.8	1.3518	2.10	4.0	31.2	80.0	9	11.80	30.2
PM	101.0	11.2	1.3524	2.35	3.5	31.2	86.4	14	10.90	31.4
3-1 AM	80.3	10.5	1.3512	2.15	3.6	30.2	83.9	15	11.80	32.9
3-9 AM	101.5	13.4	1.3512	2.10	3.6	28.0	77.3	14	10.10	28.2
PM	98.0	14.0	1.3531	2.50	3.7	36.3	97.3	11	10.10	27.3
3-10 AM	85.8	11.9	1.3522	2.30	3.2	30.0	94.0	12	9.30	28.7
3-17 AM	86.2	10.4	1.3510	2.20	3.9	33.2	82.8	10	12.68	32.6
PM	99.0	14.4	1.3550	2.80	4.0	34.3	85.2	10	13.50	33.7
3-18 AM	73.5	14.7	1.3520	2.50	4.0	33.2	84.0	16	12.68	32.0

(Refused any more treatment. Went home. Not much better for past year. Irritable.)

This patient is one in which we could see no improvement. He would not cooperate very well. He wanted to quit after the third treatment, and it became an effort each time to get any cooperation from him. After nine treatments he went home. Only once were we able to raise the temperature to 103°. Most often it was only 101° to 101.5°.

CASE No. 3—MR. E. R.

Date 1931	Blood Sugar	Blood Urea	Sed. Rate Hr. Min.	Ref. Indx.	Vis.	R.B.C.	Corp. Vol.	Ret. Cnt.	Hb. Grm.	Corp. Hb.
7-6 No. 1	87.7	11.55	1 20	1.3500	1.75				78	
No. 2	102.5	17.35		1.3490	1.85					
7-4 No. 1	90.9	17.1	0 40	1.3490	1.65					
No. 2	90.9	18.3	0 45	1.3480	1.65	4.40	90.7			
7-28 No. 1	90.9	13.1	1 30	1.3491	1.65	4.00	89.4		70	29.3
No. 2	102.5	21.5	0 50	1.3499	1.75	4.33	81		82	32
No. 3	93.0	25.0	1 15	1.3450	1.70	4.1	84		75	31
8-4 No. 1	87.7	16.6	1 15	1.3489	1.60	3.97	Xces. Ox. 70		75	31.9
No. 2	106.8	10.5	?	1.3510	1.80	4.22	93.3		80	32
No. 3	84.0	26.0	1 15	1.3510	1.60	3.89	98.7		75	32.5
8-11 No. 1	84.5	15.45	1 15	1.3492	1.70	4.12	85.6		75	30.7
No. 2	98.6	16.05	0 50	1.3520	1.80	4.15	106		80	32.5
No. 3	96.1	17.55	1 10	1.3482	1.65	3.37	101.4		65	32.5
8-18 No. 1	90.9	21.8	1 40	1.3482	1.70	3.90	111.7		75	32.5
No. 2	96.1	19.3	1 25	1.3500	1.80	3.97	91.5		70	29.5
No. 3	114.9	20.5	1 20	1.3520	1.80	4.01	93.4		75	31.1
8-25 No. 1	87.3	13.05	2 15	1.3472	1.70	3.63	99.8		70	32.5
No. 2	93.9	18.45	2 0	1.3491	1.75	3.50	112.7		65	31.3
No. 3	91.8	13.75	2 5	1.3520	1.80	4.03	82.4		75	31.2
9-1 No. 1	94.8	10.35	1 45	1.3480	1.70	3.71	97.9		70	31.61
No. 2	103.6	10.65	—	1.3490	1.75	4.83	98.1		95	33.95
No. 3	93.9	12.15	1 15	1.3490	1.75	3.42	103.1		65	29.1
9-8 No. 1	90.0	10.2	1 50	1.3470	1.55					
No. 2	78.8	11.1	—	1.3472	1.60					
No. 3	76.4	8.9	1 30	1.3470	1.55					
9-15 No. 1	88.1	17.3	1 55	1.3480	1.75					
No. 2	84.0	16.8	1 15	1.3520	1.80					
No. 3	100.5	19.65	1 40	1.3880	1.75					

SUMMARY: White male, age 56 years, completely disorientated as to time and place. Numerous convulsive seizures, unable to obtain history. Was given sixteen treatments from July 7, 1931, to March 1, 1932, with a maximum temperature around 106° on four treatments; others 103° to 105°. At the present time convulsions have ceased and the patient has returned to work. He owns and operates a chicken farm.

CASE No. 4—J. M. F.

Date 1931	Blood Sugar	Blood Urea	Ref. Indx.	Vis.	R.B.C.	Cell Vol.	Corp. Vol.	Sed. Rate Hr. Min.	Hb.	Corp. Hb.
10-7										
4:30 P.M.	80.4	13.05	1.3490	1.80	5.	44.64	88.22	8 10	90%	30.50
9:00 A.M.	86.1	14.4	1.3500	1.80				6		
12:15 P.M.	93.9	20.7	1.3530	1.85		47.75	103.7	4		32.69
10-20	77.	11.55	1.3500	1.85	4.7	43.60	91.78	2	90%	32.02
	76.	14.7	1.3525	1.95		47.75	107.46	2 10		32.28
10-21	90.9	20.4	1.3510	1.8	4.2	44.63	105.50	1 40	85%	33.76
11-5	81.3	12.75	1.3488	1.8	4.2	42.55	101.06	50	85%	34.12
	88.5	13.57	1.3510	2.0		47.75	110.53	45		37.52
	82.3	17.1	1.3510	1.9	4.3	41.51	96.53	32	90%	35.37
12-8	80.8	13.95	1.3484	1.75	4.6	47.77	103.6	4 20	80%	29.32
	83.3	15.45	1.3515	2.	4.6	48.81	105.42	3 15	80%	29.20
	88.5	16.65	1.3490	1.8	4.5	41.52	92.17	4	85%	31.92
1932										
1-14	79.4	10.8	1.3510	1.85	4.6	46.93	101.59	2 20	80%	26.39
	97.5	12.75	1.3510	1.95	4.8	46.73	97.17	2 15	85%	29.65
	96.6	14.4	1.3510	1.8	4.3	49.85	105.93	2 10	80%	31.44

SUMMARY: White male, age forty-nine years, with disseminated sclerosis of spinal cord, which began August, 1930. He was given five treatments with a maximum temperature of 104°, at end of which time his doctor said the course of the disease was arrested, and has remained so. This is another case which shows the sedimentation rate much more rapid after the second time. After one month of rest it returned to higher levels.

CASE No. 5—D.W.

Date 1931		Blood Sugar	Blood Urea	Ref. Indx.	Vis.	R.B.C.	Cell Vol.	Corp. Vol.	Sed. Rate Hr. Min.	Hb.	Corp. Hb.
11-3	No. 1	79.05	11.85	1.3490	1.75	3.9	42.56	106.66	6 30	85%	36.02
	No. 2	134.2	18.3	1.3525	2.05		42.60	103.9	5 50		32.97
	No. 3	99.5	24.45	1.3510	1.85	4.6	42.56	91.05	8	90%	32.70
11-12	No. 1	93.02	11.85	1.3490	1.85	4.2	43.60	102.35	2 25	85%	33.80
	No. 2	109.3	12.75	1.3520	2.1		43.60	98.64	2 50		34.41
	No. 3	128.2	20.4	1.3498	1.9	4.7	43.60	96.20	2 45	90%	32.09
12-1	No. 1	90.	12.3	1.3490	1.75	4.3	49.85	115.39	4 15	85%	33.25
	No. 2	124.3	17.7	1.3512	2.		48.81	119.04	4 45		32.97
	No. 3	124.3	22.2	1.3510	1.9	4.6	40.48	84.59	3 05	90%	32.99
12-15	No. 1	83.3	13.05	1.3500	1.85	4.5	47.77	104.75	2 45	90%	33.35
	No. 2	129.9	20.7	1.3560	2.1		47.77	103.39	55	90%	30.83
	No. 3	131.6	14.55	1.3532		4.8	43.60	94.10			33.56
1932											
1-12	No. 1	78.2	11.91	1.3489	1.7	4.3	42.56	98.97	2 15	85%	33.40
	No. 2	144.9	9.75	1.3510	1.9		40.48	105.26	1	85%	32.08
	No. 3	121.9	20.85	1.3529	1.9	4.5	41.52	92.27	4	85%	31.90

SUMMARY: This was a white man, age forty years, with cerebro-spinal syphilis, which began in 1928 with loss of vision. He entered the hospital on November 3, 1931 and was given the first treatment, at which time the Wassermann was four plus. He was given three treatments with a maximum temperature of 106.2 and one to 107°. The others were around 105°. After five treatments, the blindness cleared sufficiently for him to return to work. This case represents one phase. At the beginning there was a prolonged sedimentation rate, which gradually came down and at the end of the fourth treatment was very rapid—55". After one month's rest the sedimentation rate was more within normal limits.

The remaining cases are reported in brief:

1. The group of arthritics.
2. The Group of C. N. S. Lues.

		Onset	Joint	No. Trtmt.	Sed.	Max. Temp.	Result
1762 1934 L.M.P.	F 29	1 yr.	Swelling of fingers.	2	(1) 8' (2) 4'	102	Improved. Pain relieved. Treatment stopped by her physician.
1255 1934 T.B.	M 44	4 yrs. ago	Feet, knee, back, wrist, neck.	2	(1) 25" (2) 37"	101.5 103	Had been unable to work for two years. Now is back at work, so treatment stopped by Indian Agency.
195 1933 S.M.	F 44	5 yrs.	Hands, hips, knees, ankles.	6	(1) 35" (2) 55" (3) 40" (4) 70" (5) 70" (6) 50"	104.8	Now able to work; practically no pain.
2019 1934 K	F 50	10 yrs.	Knees, elbow, back.	12	(1) 27" (2) 30" (3) 30" (4) 30" (5) 30" (6) 30" (7) 37" (8) 35" (9) 40"	105	Able to do own work. Is free from pain. Movement in ankylose joint increased 20%.
653 1934 E.F.	M 25	1 yr.	Followed fall. Fingers, elbows, shoulders, back, knee.	7	(1) 45" (2) 28" (3) 1' 30" (4) 50" (5) 2' (6) 20' (7) 24'	105.2	Was improved as shown by motion and swelling, but no relief obtained until compensation adjusted.
1931 E.M.W.	M 34	2 yrs.	Fell off ladder, striking his back.	1	(1) 12' before (2) 10' after	102	Would not cooperate. Is better now, after settlement made.

nated lateral sclerosis were benefited, but it is not enough to draw any conclusion.

In the above cases we were able to follow so closely the various tests because of the aid derived from the Mark Finston Fund of St. John's Hospital. In this paper, I want to express my appreciation to Dr. I. A. Nelson and Sister M. Gratiana for their cooperation in the laboratory work; also Dr. L. H. Stuart and Sister M. Agneta and others in the x-ray department of St. John's Hospital for their untiring efforts in this work.

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* * *

METHODS

Sedimentation Test: Linzenmeier tubes used; 0.3 cc. of two per cent sodium nitrate, 0.7 cc. blood. We arbitrarily used the time—in minutes—to reach the eighteen mm. mark for both men and women.

Cell Volume: Wintrobe hematocrit with oxalated blood. A correction of 3.6 per cent was used in all calculations.

Erythrocyte Count: Chambers and pip-

ettes checked with a Bureau of Standards assembly.

Hemoglobin: A Dare instrument was used by one technician who seemed to be able to get checks with this instrument against Newcomer, Sahli and Haskins-Osgood methods.

Viscosity: Hess Viscosimeter, large model. Temperature twenty degrees C.

Refractive Index: Abbe by Spencer. Temperature twenty degrees C. Serum allowed to separate twenty-four to thirty-six hours before being tested. All sera were checked culturally. Aseptic technic was used until the actual tests were done.

* * *

DISCUSSION

Dr. L. H. Stuart, Tulsa:

There has been quite a point of discussion since the work was done in the physical therapy department of the St. John's Hospital. I became considerably interested in it myself. The discussions that took place during the time when we were trying to find some method of preparing and knowing how to handle these cases. We finally arrived at the conclusion that the sedimentation rate was the one thing we got out of all laboratory work which would give you the best knowledge as to the procedure. It is the question that there is no definite thing that can be set down and followed in all cases. Other treatment cases are handled as individual cases, whether the temperature is to go to 102 or 105. This depends on the case and how to

		Symptoms	Remarks	No. Trtmt.	Max. Temp.	Remarks
1933 A.L.C.	F 34	Headache. Dizziness. Loss Memory.	From transfusion five years ago.	10	106 One 107	Marked improvement. Is well now.
1932 A.C.A.	M 43	C. N. S. Lues. Dementia.	Had malaria and large amount other treatment.	1	105	After first was so demented he was sent to Vinita.
1932- 1933 K.T.	F 47	Tabes. Pain in legs and abdomen. Luetic aortitis.	Had 5 operations before tabes developed.	9	104.2	Would not cooperate. Only partial relief.
1933 E.E.C.	M 56	C. N. S. Lues.		2	106.5	Improved.
1933 R.G.	M 19	Paresis.	Hereditary. Late walking. Late eruption of teeth. Violent temper.	7	106	Marked improvement.

With these above cases of C N. S. lues there was a definite improvement in all but one.

handle the case from then on. Some go along in fairly routine manner where pretty much the same thing can be done for all, but they cannot all be handled that way. There is one thing that must be considered more than was mentioned in the paper—one of the untoward things that happens in these cases, heat exhaustion. When these patients get up to 100, 105, 106 and 107 and because they are over 103 or 104 something is going to happen. It happens in these individuals that are low in blood chloride. We found that we did have cases several years ago of heat exhaustion and we found that chloride of the blood had been considerably lower than normal. From then on we gave a small tablet of sodium chloride. From then on heat exhaustion diminished. Increase the chloride and also give these patients plenty of glucose, orange juice, anything with sugar in it. We do not know all there is to know about it. We got a little bit more acquainted with the process of how to handle these patients by taking on variants of those we thought would be benefitted and those who had been benefitted in the hands of other workers.

Dr. Ned R. Smith, Tulsa:

My experience in hyperpyrexia is limited. I had an experience with a grocer who in his work gave back change for a five dollar bill when given a one dollar bill. He could not find his way home. He was turned over to me as a joke to see what the new doctor knew. No case should be regarded as hopeless until treated. After being given hyperpyrexia followed by eighteen months of intensive therapy he went back to the grocery and has been there five years. In cases of neurosyphilis I have treated them early and late. There seems to be some reason to believe that the earlier you can get them the better results will be. But remember before hyperpyrexia was introduced, the batting average of paresis was the death warrant. Now we can tell people they have one chance in three they will get entirely well. From the standpoint of syphilis of the central nervous system hyperpyrexia by diathermy or malaria represents a distinct step forward. Do not tell the family if the patient has syphilis of the brain that they are hopeless; it is not true.

Infantile Eczema*

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The term infantile eczema is a broad term, and literally means an eczema in an infant. Some authors classify all the various types of eczema in a baby or child under this broad term. However, I feel that when we speak of infantile eczema we mean a certain specific variety of eczema that occurs in infants and presents a rather well defined characteristic type of eczema. The flush areas of the cheeks are the sites of predilection, with the forehead and ears and scalp often involved. The disease is usually a chronic persistent one, very rebellious to treatment, and relapses and recurrences are the

rule rather than the exception. The infant may present vesicles, pustules, excoriations, bloody thickened crusts, and all the various stages, from an acute to a chronic type of eczema. They develop a "masked face" from constant scratching. Secondary infection is often present.

To successfully treat this condition, I feel that one must be somewhat of a dermatologist, which was an expression coined by Sulzberger in speaking of one who is both a dermatologist and an allergist. And I may add that a knowledge of infant feeding is also very important. So three classes of specialists see these cases, first usually the pediatrician, second the allergist, and lastly the dermatologist. And

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it is usually by a successful combination of the three that the best results are obtained.

The following conditions must be ruled out before one has the true atopic variety of infantile eczema. Dermatitis seborrhea may closely resemble infantile eczema, especially around the ears and scalp and face, but usually the history of greasy scales, and a tendency to persistence on the scalp, rather than the face, rules out this condition. Infectious eczema, this often follows an otitis media, impetigo contagiosa, or other staphylococci or streptococci conditions and may resemble to a striking degree true infantile eczema.

Fungus infection, such as *tinea capitis* or *corpus* may at times resemble infantile eczema, however, the close inspection of the lesions and the finding of the fungus by culture or examination under the cover slip, will rule out this condition.

Contact dermatitis from contact with ivy plants, vines, certain dyes in baby bonnets, the use of too strong a soap on the infant, contact with perfumes, and cosmetics that the mother uses, may all produce a dermatitis that may require some study before finding the etiology. Needless to say that doing all the food tests in the world for a contact eczema due to soap, dye, or other external factors, and wrongly diagnosed as a food eczema, will result only in a waste of time and effort.

When the above conditions or types of eczema are eliminated, then and only then do I feel that you are qualified to call the case one of atopic or true infantile eczema.

The treatment of (atopic) infantile eczema is usually of a dual nature, that is, local soothing measures and that which is directed toward finding the etiology. I am not going to start a dispute as to the best method of food testing these infants, that is, the scratch method versus the intradermal tests. I shall state, however, that in my hands, I get less negatives and false positive tests by the intradermal method than by the scratch method. The three most important things to test for are milk, egg, and wheat, as these are the basis of most infant diets. I wish to state here now, that a genuine cow milk sensitive case cannot take boiled, acidified, or any form

of canned cow's milk without keeping the eczema flared up. I advise putting these infants on a goat's milk formula. If fresh goat's milk is not available, there is now a canned goat's milk product that can be obtained. In breast fed infants, the child is usually egg sensitive, which is transmitted through the mother's milk. Eliminate eggs from the diet, being careful that the infant or mother does not get traces of egg in cake, bread, custard, pretzels, etc. Often milk sensitive cases are barley sensitive, and many of the soya bean milk preparations contain barley, and this may be the explanation of failure of soya bean milk substitutions to help the eczema.

Advantage of the passive transfer may be used in testing these cases. The whole blood is collected from the infant, serum separated and injected intradermally into a parent or relative, after first ascertaining his individual sensitivity. In twenty-four hours these transferred areas are tested with the different foods and the reactions obtained are identical with those of the infant's own skin. My good friend, Dr. W. C. Spain of New York, has an individual whom he pays a salary just to act as his human guinea pig for these passive transfer tests. After doing the skin tests, it is then necessary to evaluate the results and eliminate those foods that give the high degree of individual susceptibility.

The local treatment consists of using wet saline packs, boric acid wet dressings, to soften the crusts and clear up the secondary infection. Some of these cases are in a horrible condition from the constant trauma that the infant does to itself, and it may require several weeks to clear up this condition. The use of restraining cuffs are usually indicated and face masks of gauze may be used to prevent this self trauma.

Following these measures I prefer to use some mild tar preparation, such as naftalan five per cent in unguentum zinc oxide base, or crude coal tar one to five per cent in the same base, applied twice daily.

These atopic cases, if followed closely, all have an allergic background, and you can expect fifty to seventy-five per cent to continue to develop new sensitivities as they grow older, and more foods are added

to their diet; they progress to the neurodermatitis stage, and later pass into the asthmatic and hay fever category. Therefore it behooves one to carefully follow these cases from year to year, and to be cautious in regards to a too favorable prognosis. My good friend, Dr. Ralph Bowen, of Oklahoma City, in a personal communication just told me of two cases of icthyosis in infants that were referred to him with a diagnosis of infantile eczema, to treat and do skin tests on. So one must be sure of his

diagnosis before being enthusiastic about tests and treatment.

The problem of infantile eczema is a vast one, and in the short time allotted to me, I do not feel that I can cover all phases of the condition, but rather try to bring out some of the errors of diagnosis, and mention some of the measures and factors in the control of this rebellious and complex problem of the allergic, pediatric and dermatological field.

The Treatment of Gonorrhea in the Male*

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CHAPTER VI

ACUTE POSTERIOR URETHRITIS

There is no more important detail in the care of acute gonococcal infection than the correct management of the case when the inflammatory condition involves the posterior urethra. The persistence of posterior gonococcal infection depends, not so much on the disease having progressed to this region, but on whether it has become firmly entrenched there. In the earlier stages of acute gonococcal infection of the posterior urethra, the mucosa, sub-mucosa and lining of the prostatic ducts are the structures that share in most of the inflammatory reaction; the glandular acini escaping disease to a marked extent. However, when inflammation is sufficient to produce signs and symptoms to a severe degree, it may reasonably be assumed that extension of infection has occurred to the deeper tissues of and around the posterior urethra.

Because of the above reasons, it is well for the physician to realize that despite a similarity in signs and symptoms "acute posterior urethritis" and "prostatitis" are not synonymous pathological entities. The prostate becomes infected to an indeter-

minable degree in many instances of acute posterior urethritis, but it probably escapes severe infection more often than we are accustomed to believe. It is not unusual to find relatively uninfected secretion as determined by microscopic examination following fairly severe acute posterior urethritis. This is a practical point in therapy, as one may by too early or too vigorous massage during or soon after an acute inflammation of the posterior urethra, convert a simple superficial infection to a more deep seated complicated one. Parenchymal infections of the prostate are disappointing in their response to treatment; requiring usually months to cure. Prostatic massage is never indicated within the first few weeks of a gonorrheal infection, and particularly contraindicated at all times when any acuteness of inflammation is present as manifested by symptoms on the part of the patient.

As is well known simple anterior urethritis is somewhat rare, posterior invasion occurs at some time or other. Providing one is watchful about the second or third week the doctor will notice some haziness in the second glass of urine voided. Frequently no symptoms whatever accompany this finding and not rarely it seems to be of an evanescent nature, lasting but a few days and then disappearing, fol-

*Third installment of the serial "Treatment of Gonorrhea in the Male." Previous installments appeared in the May and June issues of The Journal.

lowed by a clear second glass from then on during the course of the disease. Because of this, the physician should not be too pessimistic so far as an early cure is concerned. It may be repeated, however, that if the inflammation is severe, it will be observed that recovery is less prompt. Therefore, it is the function of the physician in his treatment of the disease to try and prevent these acute complications, and if they perchance occur, attempt to shorten their duration and mollify their acuteness.

What is the cause of acute inflammatory reactions of the posterior urethra? It may be stated, for the most part, that this complication can be prevented by a combination of intelligent treatment of the disease on the part of the doctor in conjunction with the faithful cooperation of the patient insofar as his personal conduct and hygiene are concerned. The physician who resorts to strong or frequent local treatments, forcible irrigations of the acutely inflamed urethra, or who passes sounds, catheters, etc., early in the course of gonorrhea will observe this complication many times in his practice. The administration of gonococcal vaccines in large doses as also prostatic massage within the first few days of posterior invasion is particularly dangerous to the development of this distressing condition. All local treatments should be stopped when there is even a suggestion of acute exacerbation of infection in the posterior urethra.

For these reasons the physician is ever alert, even bordering on suspicion in his daily care of the patient and especially so in the first few weeks of the disease. In order to keep the infectious process within bounds, he attempts to forestall acute inflammatory reactions of the posterior urethra early in their course. Because the first few days of posterior invasion of infection is particularly dangerous, he inquires of the patient at each visit whether he has had to urinate more frequently or whether urination is accompanied by more pain than usual.

What are the signs and symptoms that seem to presage these acute manifestations? Because the posterior urethra and trigone is the point of origin for the initiation of urination, inflammation in this re-

gion will produce what might be called bladder irritability as shown by a slight increase in frequency of urination. Terminal pain on urination is also a prominent symptom. This pain is produced by the contraction of the bladder neck at the end of urination. A bit of blood is often squeezed out of the engorged mucosa by this muscular contraction and shows at the end of urination. Various types of referred pains are often complained of; pain down to the tip of the penis, pain in the perineum and testicles, etc. With the complaint of any of these symptoms by a patient who is undergoing treatment for gonorrhea, it should be a "red flag" signal to the doctor for him to stop all local therapy and initiate measures to abort the process.

The treatment recommended is not so much what is done but what is not done. The patient is instructed to limit his activities, and if practical, to the extent of going to bed. Often the cessation of local injections for a few days will allow the process to abate even before it gets barely started. Hot sitz baths, hot rectal irrigations may be advised if found convenient. The use of an alkalizing agent in combination with some antispasmodic drug, usually tincture hyoscyamus or belladonna is very rational therapy, as the elimination of all painful bladder neck spasm undoubtedly tends to limit the inflammatory process.

Recently sulfanilamide has been added to our therapeutic armament for the treatment of gonorrhea and has been found in our experience almost a specific for the relief of signs and symptoms arising from this complication of the disease. It is given in doses of thirty to forty grains daily and invariably relieves the acute stranguary, giving the patient almost immediate comfort. Not infrequently, there will be observed a marked cessation of penile discharge even to the point of producing clear urine specimens. The immediate results obtained with this medication are so spectacular in the majority of instances that a false sense of security is engendered in both the patient and doctor. Experience has shown that often prostatic infections are still present; apparently being held in abeyance by the effect of the drug. If restrictions on conduct are raised and treat-

ment discontinued, the disease almost invariably relapses. It has also been found that sulfanilamide seems to lose its effect when administered over a period of time. For these reasons a limited experience with the drug has proven it extremely dangerous because of its "masking" effect on the clinical picture of the disease. If it be prescribed, it should be under strict supervision by the physician who should be thoroughly acquainted with its value and limitations.

Another therapeutic measure not ordinarily available to the average physician for the relief of this condition is the production of artificial fever. Increasing the temperature of the body for a short time by means of diathermy has proven uniformly efficient in giving relief from bladder irritation and occasionally produces a marked impetus toward cure of the disease. For various reasons, namely, the average patient's intolerance toward the treatment, the cost of the procedure and other factors, has given us limited experience with this method for the radical cure of gonorrhea. However, as a palliative measure in hyperacute infections, and especially in this particular complication of the disease, it has been unusually effective. The temperature produced need not be excessive, usually not over 104° F.

Before again initiating local therapy, the patient should have complete bladder comfort and even then the first few injections should be limited to the anterior urethra. Later, one may cautiously allow the medicine to flow past the sphincter and into the posterior urethra, watching carefully for bad effects produced by the first few treatments. If there is a tendency toward activation of the previous symptoms, the local injections are immediately stopped.

When the physician has found no serious effects are produced by the posterior instillations, he may with caution begin massage of the prostate. If little pus is present as determined by a microscopic examination of the expressed prostatic secretion, the continuation of massage is a doubtful form of therapy especially in the first month of infection. It will be found better to observe the progress of the infection under simple urethral treatment. However, with the development of pos-

terior involvement, severely acute or prolonged in character, the prostate will be found to be more or less involved and will demand some future massaging in order to obtain a cure. Guidance in this direction may be obtained by carefully following the clinical progress of the case as well as by repeated examinations of the prostatic secretion.

* * *

CHAPTER VII

CHRONIC PROSTATITIS—DIAGNOSIS

Long standing gonococcal infection practically always means a foci located within the prostate gland. Fortunately the urethral mucosa shows quick improvement providing no infection exists in the glandular structures normally draining to it. If infection is present in the prostate or the peri-urethral glands, the urethra reflects this by an inflammatory reaction of its mucosa as shown by the continued presence of pus, mucous or shreds in the urine.

Chronic prostatitis may be due to other bacterial factors aside from gonorrhea; namely, the staphylococcus, streptococcus, colon bacillus. These non-specific infections of the prostate may be complicated by gonococcal infections. Clinical experience has shown that a gonococcal infection of the prostate may prepare the gland, so to speak, for the invasion and entrenchment of these secondary organisms that originate from other foci and the resulting non-specific infection may keep signs and symptoms active for a long period of time even when the gonococcus itself has disappeared. Quite often these so-called secondary invaders prove extremely rebellious to the ordinary forms of therapy. Their foci must necessarily be removed before a cure can be obtained. The removal of a dead, infected tooth may therefore be a more rational therapeutic procedure than any particular type of urethral injection.

As far as the actual treatment of chronic prostatitis is concerned, the principal followed which holds good as in other infectious conditions is: "good drainage." When drainage is inadequate, infections tend to persist no matter how or what local treatment is rendered. Good drainage as it pertains to prostatic infection means an unhindered pathway from the base of the in-

fectured glandular acini to the urethral meatus. Often in the case of long standing infection, the prostatic ducts in the floor of the posterior urethra are obstructed by secondary formations of a cystic or granulomatous character that act as a barrier to the free passage of infected material from the gland. These extraneous formations are merely the end result of tissue stimulation from the presence of an irritating discharge on the urethral mucosa over a long period of time. They must of necessity be removed before progress can be made in the case.

The physician must also search for obstructions along the urethral channel in the form of large or small caliber strictures. The stasis and congestion induced in the posterior urethra by a stricture acts as a potent factor for the chronicity of infection. Small urethral meati fall in the same category as strictures and must be enlarged as an important preliminary treatment. Good judgment must be used in this respect, as there is a tendency to apply meatotomy too frequently even to those of narrow but quite normal size. A meatus of more than twenty French size is in no need of enlargement. One should be mindful there is normally a narrowing of the urethra, as it emerges from the glands, physiologically for the purpose of giving force and direction to the stream. A too large meatus is a handicap to the individual so far as satisfactory voiding is concerned.

Occasionally, but not often, we find actual suppurative cavities beneath the posterior urethral mucosa which drain into the urethra by small calibered openings. These are aptly called "bottle neck" pus cavities, and represent the aftermath of abscess formation resultant from the blocking of a prostatic duct. They may occasionally have to be enlarged cystoscopically in order to provide adequate drainage.

The diagnosis of chronic prostatitis rests not so much on the palpation per rectum of the gland, but more on a careful microscopic examination of the expressed secretion for the presence of pus. Many infected prostates, if one had only palpation to go on, present no evidence of disease, but when the secretion is examined micro-

scopically, gross amounts of pus are seen. However, each patient should be carefully examined by means of a finger inserted in the rectum in order to note any physical abnormalities present. These may be grouped under four headings: size, consistency, contour and mobility.

The normal prostate is about the size of a walnut and presents little hindrance to the examining finger as it is inserted in the anus. A poorly draining gland may be one or more times larger. Oftentimes even severely infected glands are apparently normal size. Enlargement of the gland is definite where there is a senile prostatic hypertrophy.

The consistency of the normal gland is somewhat firm and resistant to the ball of the finger, giving one a sensation of slight "spring" to the tissues. In chronic infections, a boggy edematous sensation may be elicited. Often, areas of softening surrounded by rather firm infiltration may be discovered and are representative of old prostatic abscesses. The fact that a gland is of a firm or soft consistency does not, however, indicate the amount of infection. Severe infections may accompany even sclerotic prostates.

The contour of the normal prostate is smooth and regular with the median interlobar fissure apparent to the examining finger. Obliteration of this fissure and nodulation of the gland is often observed in instances of long standing infection. When the inflammatory process has extended to the periprostatic tissues, the similarity to carcinoma of the prostate is striking. Induration, nodulation and immobility of the glands are dominant physical characteristics of prostatic carcinoma. A marked nodulation occurring in a young young adult also suggests a tuberculous process and a careful examination of the remainder of the genitalia should be made with this diagnosis in view.

Comparatively little secretion can be massaged from the ordinary gland. However, the amount of secretion obtained is no criteria whatever as to the extent and amount of infection. In a poorly draining prostate where there is an accumulation of secretion, one may obtain a rather large amount of material; but in a gland where the drainage is somewhat adequate, one

may find a "dry tap" so to speak, even when infection is grossly present.

Pain is an indefinite manifestation of prostatic disease. Certainly we observe pain on palpation of the acutely inflamed prostate and if an abscess be present, the pain is intense. Ordinarily, the careful rectal palpation of the gland should not produce much discomfort to the patient.

The physician who treats chronic prostatitis should employ the microscope not only for a diagnosis, but as a means of following the infection in order to observe its response toward treatment. The freshly expressed secretion obtained by massage is allowed to fall on a clean slide in the form of a discrete drop. Upon this drop is placed a cover glass and the microscopic examination should be made by means of the high dry lens. Pus may be observed from the presence of nucleated cells, care being exercised to differentiate them from the normal elements of prostatic fluid; lecithin bodies and corpora amylacea. Pus may be found as discrete cells or arranged in clumps. The latter finding has been stated to be found in poorly draining glands. One should count the number of cells to each high power field in an attempt to evaluate the amount of infection. An arbitrary method of grading the severity of the infection is by calling up to ten cells per high power field Grade I; ten to twenty cells, Grade II; twenty to forty cells, Grade III; and over forty cells per high power field, Grade IV. This grading has proved an invaluable system for the written records.

A stained slide should be made by means of the Gram technic and the type of organism, thereby, determined by microscopic examination. Extracellular Gram negative diplococci is suspicious evidence of gonorrhea; intracellular Gram negative diplococci are pathognomonic. Streptococci are especially significant as they suggest a draining foci elsewhere.

The urine is examined by means of the two glass tests in order to note to what extent the second glass is soiled. When sufficient prostatic secretion by massage cannot be obtained, a convenient method is to collect the urine voided following

massage, submitting it to centrifuge and then examining the specimen. Oftentimes the amount of secretion is insufficient to drain spontaneously from the urethra, and this procedure has proven invaluable in these instances in order to provide a satisfactory examination. The presence of turbidity in the second glass of urine passed before massage is indicative of posterior involvement, but it must be remembered also that bladder and upper tract infections will also present this finding. Occasionally, in long standing infections, one will find clear urine in the second glass. This is due to the fact that there is little or no inflammatory reaction of the urethral mucosa.

The symptoms arising from an infected prostate gland depend somewhat on whether drainage is adequate as well as the amount of acuteness of the inflammatory process. The urinary symptoms are in a great measure in proportion to the amount of concomitant posterior urethritis and trigonitis. Frequency, urgency and bladder irritability are specific complaints from disease of these structures. When the posterior urethritis is improved by treatment, these symptoms tend to disappear. Pain may be a prominent symptom of prostatitis with referred distress to the tip of the penis, testicles and perineum, but more often it takes the form of an indefinite backache low in the sacral region.

Chronic prostatitis may occasionally produce sexual disturbances. This may take the form of premature ejaculation which is due to a hyper-irritability of the sexual centers from the congestion around the verumontanum. This symptom, if allowed to persist any length of time, will lead to complete impotency of the individual.

Last but not least, toxic manifestations in the form of arthritis, neuritis, myalgia, iritis, etc., due to the presence of toxin originating from bacteria within the infected gland are extremely common. The prostate in such disorders should be checked thoroughly and repeatedly for the presence of infection as manifested by pus in its expressed secretion.

(To be continued.)

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McAlester, Oklahoma

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McAlester, Oklahoma

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

MEDICAL AND ECONOMIC PROBLEMS

Never before have I heard our economic problems so concisely stated as in the President's Address before the House of Delegates of the *American Medical Association* at Atlantic City, and while there was liberal discussion and many ideas presented the solution is far from complete.

The one problem that is never approached by any of the foundations, organizations and individuals who would seek to control the practice of medicine, is the care of the poor, those who are able to pay nothing. All of the schemes put forward seem to deal with those of moderate income, leaving the care of the indigent, as always, in the hands of the physicians, and we have always accepted this

responsibility as a part of our obligation to humanity. The various insurance features proposed do not touch this class as they have no money to pay premiums; the cooperative hospital idea does not take these people into consideration as they have no money to buy stock and pay assessments; the counties as an organization do not care for them as the assessment for this purpose is insufficient, consequently they are still and always the doctor's problem and he has solved it by giving his time and talents freely for lo these many years.

I am going to copy here some of the questions as promulgated by Dr. Heyd in order that all our membership may give these matters their consideration and help to solve these very perplexing problems:

1. That every practitioner believes that the proved indigent is entitled to medical services free of all charges and that the cost of this service should be paid by taxes levied on the general population.
2. The principle that indigence is a local problem and should be handled in the area in which it arises.
3. The extension of medical services to the indigents in their homes and the doctors' offices with remuneration to the physicians on a capitation basis under the direction of the county medical society, all free services to indigents to be rendered by the physicians or out-patient department of the hospital within the geographic or regional zone in which the indigent resides.
4. The certification of indigents, fairly, sincerely, honestly and sympathetically by the application of standards of eligibility, by central bureaus under the department of welfare, with proper representation from the county medical society. It should not be the function of the out-patient department to pass on the validity of indigents, nor should they admit for free services those that are not in truth indigents.
5. A medical census of the indigents, to learn what our load is and how to take care of it. There should be de-

- vised a positive means of identification to prevent padding of the lists.
6. The payment of a fair remuneration to all physicians working in outpatient departments or giving medical services to the indigents in their homes. This remuneration must not be so low as to bring with it an inferior medical practice and the palliative bottle of medicine. It should not be too high. A fair average can be worked out and still maintain the best qualities of scientific medicine. In the planning of the details of this service it might seem wise to set up a special subdivision of activity under the auspices of the county medical society.
 7. The unequivocal opposition to all forms of compulsory health insurance. Insurance schemes tend to relieve the individual of his own responsibility and to increase the prolongation of illness. In short, under an insurance scheme it is profitable for a person to be sick.
 8. What are we to do with "catastrophic illness?" By catastrophic illness I mean the emergency that is expensive and for which no ordinary family can budget. Its emergency character, its expense and the necessity for immediate help renders it an important item in the conception of any medical service. It probably represents from eight to ten per cent of acute illness at any one time.

It seems to me that these are not unattainable objectives but can be brought into being by mutual consideration of the problems between the various parties interested and organized medicine."

It would appear after careful consideration of the foregoing propositions that it would be completely unnecessary to upset the present basis of the practice of medicine in order to meet all ordinary demands for medical service. The big problem, of course, is the catastrophic illness that presents itself in only about eight to ten per cent of the acute illnesses at any one time, and with hospital insurance as recommended by your Council and the House of Delegates at the Annual Meeting in Tulsa,

it would seem that even this could be well met by dividing the doctor's fee into monthly payments, extending over sufficient length of time so that they may not cause any very serious inconvenience.

We must always keep in mind the very definite difference between hospital insurance and the Cooperative Hospital which peddles medical and surgical service as well as hospitalization, and it will always be necessary that the members of the medical profession, working in cooperative hospitals, shall meet the same professional and economical requirements as every other physician and surgeon.

Give all of these propositions your careful consideration and then give Organized Medicine in Oklahoma the benefit of any constructive suggestions that you may have to make.

REPORT OF THE A. M. A. MEETING IN ATLANTIC CITY

The eighty-eighth annual session of the American Medical Association will go down in history as one of the most important medical meetings that has ever been held anywhere and the registration, 9,746, as the largest number of physicians who attended any medical meeting in the history of the world. The large number in attendance shows that the medical profession is interested in organized medicine and is willing and ambitious to spend their time and money for the benefit of the profession and to prevent us from being forced into state medicine.

The House of Delegates was called to order at ten o'clock on Monday morning and after attending to the regular routine, the House went into executive session at which time the advisability of having the Honorable J. Hamilton Lewis, U. S. Senator for Illinois, meet with us and discuss medical legislation was taken up and the secretary was instructed to wire Senator Lewis to come to Atlantic City and appear before us at the executive session on Tuesday afternoon.

After the adjournment of the House of Delegates at 2:30 p. m., Monday, many of the members went to Seaview golf course where the annual tournament of the American Golfing Association was held; after which an excellent banquet was served and the prizes were awarded to the winners in the different classes. At the same hour, the New Jersey State Medical Society entertained all of the officers with a floor show and banquet in the Hotel Ambassador which lasted for several hours and was thoroughly enjoyed.

Senator Lewis's address was printed in the Journal in full and if you have not already done so, your representatives suggest that you read it carefully and you will see that we have a friend on the medical legislative committee in the Senate who will cooperate with our legislative committee and if the plan works out along the lines he suggested, the medical profession will still be a profession and not hirelings.

Considerable furore was caused by the resolu-

tion on the Development of a National Health program introduced by the New York delegation which was placed in the hands of a reference committee who spent twenty-four hours studying and revising same and finally after removing the objectionable features, returned it to the House where it was o. k'd along the lines mentioned by Senator Lewis, which in a nutshell is as follows: all indigents to receive medical attention from the physician of their choice and the physician to receive a moderate remuneration for his services which is to be paid by the government, but anyone who poses as an indigent and is not, will be guilty of fraud; and the physician who tries to collect from the government for someone who is not an indigent is also guilty of fraud.

The Reference Committees were appointed by the Speaker and Oklahoma was honored by having a representative on the Committee on Reports on the Board of Trustees and Secretary.

Dr. N. B. Van Etten, Speaker of the House, gave his annual address and issued service medals to those who have been delegates for twenty years or more, who were all introduced to the House, as well as the members who were in the House this year for the first time were also introduced. Dr. Thomas S. Cullen of Maryland attended his first session of the House of Delegates in 1902, and is the dean in point of attendance.

The Speaker's address was followed by the address of President Charles Gordon Heyd, who stressed the number of major problems to be solved by the profession. The most important of which is medical indigence, a condition untouched and unanswered in all systems of compulsory health insurance and should receive serious consideration. Dr. Heyd pointed out eleven different facts pertaining to medical indigence and we suggest to you that you read and study his address, which appears on page 2130 of the June 19th issue of the American Medical Association Journal, and you will see that Dr. Heyd has given this serious consideration and is one of the outstanding medical minds of the country and has done a remarkable job the past year, especially as he was put into office without having a year's preparation which is the custom, but when Dr. Tate Mason of Seattle died, Dr. Heyd was made President by the Board of Trustees and has made one of the most remarkable presidents we have ever had.

The President-Elect, Dr. J. H. J. Upham, then addressed the House of Delegates and he also has been a very busy man, traveling over a large portion of the United States and appearing at numerous medical meetings. Like Dr. Heyd, his aim and ambition has been to aid and benefit the medical profession and in his teaching capacity, he has done a great deal toward educating the public in public health meetings.

Colonel W. W. Evans, representative of the American Bar Association, was introduced by the Speaker and he talked to us for about ten minutes on subjects of interest to the medical profession as well as the legal profession and it seems that the Bar Association has the same things to contend with as attempts are constantly being made toward socialization of the American Bar Association; but with the professions standing solidly together, socialized medicine and socialized law will never become a fact.

The committee to propose amendments to by-laws providing for the fitting recognition to fellows rendering distinguished service in science and art of medicine proposed some amendments which

will allow medical men to receive credit for distinguished services in science and medicine.

The newspapers in reporting the Atlantic City session laid great stress on the fact that the Association had approved birth control and the Association did go far enough to suggest that contraceptives should be used only upon the advice and under the direction of licensed doctors of medicine.

A great many resolutions were introduced, among them being the ones presented at our State Meeting in Tulsa and they were referred to the reference committee on executive sessions.

The committee on re-apportionment of Delegates reported on Tuesday morning and brought in a recommendation that the states be allowed one delegate for each 825 members instead of the past basis of 775 members and their report was adopted, as the By-Laws require that the number of Delegates shall not exceed 175. This re-apportionment allows Massachusetts and the Philippine Islands to each gain one delegate; New York to gain two and Missouri and Oklahoma to each lose one. So it is up to the profession in Oklahoma to increase our membership if we wish to continue having three representatives. It should be easy to increase our membership to 1651, which would call for three delegates in the future as in the past. There are at least two hundred men in our state who are not members of the state society but should be, and if everyone will do his part we will have the required number at the time of our Muskogee meeting next May.

A telegram from the American Dental Association extended best wishes for a meeting of marked distinction and deep significance for the future of medicine and the health of our people was received and formal acknowledgment was wired them.

A resolution was introduced by Dr. Vest, West Virginia, relative to the selection of meeting places where the needs of the medical profession could be taken care of; the gist of this resolution was, that the locations for the annual meetings should be made three years in advance and when the location for the 1938 meeting came up it was unanimously decided to go to San Francisco. At the same time it was announced that Cleveland had extended an invitation for 1939, and Dr. Conaway of Atlantic City extended an invitation for 1939; but no doubt, Cleveland will be the meeting place in 1939, although the 1939 meeting place will not be definitely decided until next year's sessions at which time the locations will be selected for 1939, 1940 and 1941.

Thursday afternoon all the committees who had not previously reported did so and the committees discharged. The election of officers followed, the following being elected: Dr. Irvin Abell, Louisville, Kentucky, was elected President-Elect; Dr. Junius B. Harris, Sacramento, California, Vice-President; Dr. Olin West was re-elected Secretary as usual by acclamation; Dr. Herman Kretschmer of Chicago was re-elected Treasurer; Dr. Nathan B. Van Etten of New York was re-elected Speaker; Dr. H. H. Shoulders, Vice-Speaker. Dr. Arthur W. Booth was re-elected to succeed himself as Trustee for a term of five years and Dr. R. L. Sensenich of Indiana was elected to succeed Dr. Sleyster of Wisconsin whose second term expired.

The medical fraternity of Atlantic City put forth every effort to make the meeting a success and there never has been more harmonious action in any city than there was in Atlantic City and we heard no complaints and nothing but words

of praise. There is no doubt but what Atlantic City is better qualified to handle the American Medical Association than any other city in the United States.

Signed:

Horace Reed,
McLain Rogers,
W. Albert Cook.

FOR YOUR INFORMATION

Operators of private laboratories, private sanitariums, and physicians employing one or more were advised today by Commissioner of Internal Revenue Guy T. Helvering to make immediate tax returns as required under the provisions of Titles VIII and IX of the Social Security Act to avoid further payment of drastic penalties which are now accruing.

Commissioner Helvering pointed out that every person employed in such work came under the provisions of Title VIII, which imposes an income tax on the wages of every taxable individual and an excise tax on the pay roll of every employer of one or more. This tax is payable monthly at the office of the Collector of Internal Revenue. The present rate for employer and employee alike is one per cent of the the taxable wages paid and received.

Under Title IX of the Act, employers of eight or more persons must pay an excise tax on their annual pay roll. This tax went into effect on January 1, 1936, and tax payments were due from the employers, and the employers alone, at the office of the Collector of Internal Revenue on the first of this year. This tax is payable annually, although the employer may elect to pay it in regular quarterly installments.

The employer is held responsible for the collection of his employee's tax under Title VIII, the Commissioner explained, and is required to collect it when the wages are paid the employee, whether it be weekly or semi-monthly. Once the employer makes the one per cent deduction from the employee's pay, he becomes the custodian of Federal funds and must account for them to the Bureau of Internal Revenue.

This is done, Mr. Helvering said, when the employer makes out Treasury form SS-1, which, accompanied by the employee-employer tax, is filed during the month directly following the month in which the taxes were collected. All tax payments must be made at the office of the Collector of Internal Revenue in the district in which the employer's place of business is located.

Penalties for delinquencies are levied against the employer, not the employee, the Commissioner pointed out, and range from five per cent to twenty-five per cent of the tax due, depending on the period of delinquency. Criminal action may be taken against those who willfully refuse to pay their taxes.

The employers of one or more are also required to file Treasury forms SS-2 and SS-2a. Both are informational forms and must be filed at Collectors' offices not later than next July 31, covering the first six months of the year. After that they are to be filed at regular quarterly intervals. Form SS-2 will show all the taxable wages paid to all employees and SS-2a the taxable wages paid each employee.

Participation in a state unemployment compensation fund, approved by the Social Security Board, does not exempt employers from the excise tax under Title IX, Commissioner Helvering said. Nor

does the fact that there is no state unemployment compensation fund relieve the employer of his Federal tax payments. In those states where an unemployment compensation fund has been approved, deductions up to ninety per cent of the Federal tax are allowed the employer who has already paid his state tax. These deductions are not allowed unless the state tax has been paid.

This tax is due in full from all employers in states having no approved fund. The rate for 1936 was one per cent of the total annual pay roll containing eight or more employees, and for 1937 it is two per cent. The rate increases to three per cent in 1938 when it reaches its maximum. The annual returns are made on Treasury form 940.

An employer who employs eight or more persons on each of twenty calendar days during a calendar year, each day being in a different calendar week, is liable to the tax. The same persons do not have to be employed during that period, nor do the hours of employment have to be the same.

ADDITIONS TO 1937 ROSTER

The following have become members of the State Association since the compilation of the Roster which appeared in the June Journal:

Alfalfa County

CHURCH, R. M. Stilwell

Haskell County

CARSON, W. M. Keota
HILL, A. T. Stigler
RUNLEY, J. C. Stigler
TURNER, T. B. Stigler
WILLIAMS, N. K. McCurtain

Jackson County

BROWN, RODERICK FRANKLIN Altus

Kay County

GARDNER, C. C. Ponca City

Muskogee County

GRAVES, J. R. Boynton

Oklahoma County

COLLOPY, PAUL J., 127 N. W. 21st, Oklahoma City
SALOMON, A. L. 1200 N. Walker, Oklahoma City

Ottawa County

PURSLEY, TURNER Picher

Pittsburg County

BRIGHT, J. B. Kiowa

Woods County

WARRICK, JOSEPH D. Kiowa, Kansas

Editorial Notes—Personal and General

DR. CLAUDE B. WATERS, Marietta, is spending three months in Vienna where he will take post-graduate work at the University of Vienna. He will return in the fall to resume his practice in Marietta.

DR. IMOGENE BUTTS MAYFIELD, Holdenville, sailed in June for a two months medical lecture tour of the European countries.

DR. JOHN F. PARK and family of McAlester spent the latter part of June and two weeks of July in Galveston.

DR. HOWARD B. SHORBE, Oklahoma City, an-

nounces his association with The Reconstruction Hospital and McBride Clinic, 717 North Robinson, in the practice of orthopedic surgery and treatment of fractures.

DR. M. C. McNEW, Ada, is taking post-graduate work at the Manhattan Eye Clinic, New York City.

DR. L. P. HETHERINGTON, surgeon in charge of the Pawnee-Ponca Hospital, Pawnee, has purchased the office and equipment of the late Dr. J. C. Jacobs, 304 First National Bank Building, Miami, Oklahoma, and will enter private practice at that location on or about August 1st.

DR. C. E. NORTHCUTT of Nieman-Northcutt Clinic, Ponca City, gave an interesting discussion on international medical relations and also a discussion of the use of contraceptives to the Pawnee County Medical Society on June 10th.

DR. L. S. WILLOUR AND DR. L. C. KUYRKENDALL, McAlester, Addressed the Le Flore County Medical Society Thursday, July 8th, at Poteau.

News of the County Medical Societies

HUGHES, POTTAWATOMIE, SEMINOLE and PONTOTOC COUNTY MEDICAL SOCIETIES held a joint meeting in Shawnee June 19, 6:30 p. m., at the Aldridge Hotel, where the following program was presented:

"Relation of Liberal Arts and the Practice of Medicine" by Dr. A. Linscheid, President of the State Normal School at Ada.

"Right Lower Abdominal Pain" by Drs. R. E. Cowling and W. F. Dean, Ada.

SOUTHEASTERN Oklahoma Medical Association held their semi-annual meeting at McAlester June 24th. with the following program:

Scientific Program—

"The More Common Cardiac Conditions; Their Early Recognition and Management"—Dr. W. L. Shippey, Poteau, Okla.

Luncheon—Aldridge Hotel, 12:15 p. m.

Program resumed at 1:30 p. m.

Invocation—Dr. R. K. Pemberton, McAlester.

Welcome Address—Dr. L. C. Kuyrkendall, McAlester.

Response—Dr. J. S. Fulton, Atoka.

"Tuberculosis, A Family Disease"—Dr. F. P. Baker, Talihina.

Symptoms, Diagnosis and Treatment of Acute Perforated Gastric Ulcer"—Dr. Keiller Haynie, Durant.

"Hyperthyroidism with Analysis of Cases"—Dr. L. C. Veazey, Ardmore.

"The Management of Diabetes Mellitus"—Dr. Alfred Baker, Durant.

The Annual Election of Officers.

The next meeting will be held in McAlester in conjunction with the Regional Fracture Committee of the American College of Surgeons, in December.

Dr. J. L. Shuler, Durant, was elected president; Dr. W. Keiller Haynie, Durant, vice-president; and Dr. John A Haynie, Durant, relected secretary.

Seventh Cruise Congress of Pan-American Medical Association in January

The Pan-American Medical Association takes great pleasure in announcing that the "Queen of Bermuda" has been chartered for the seventh Cruise-Congress. As you know, we had this boat for the last cruise and it proved to be most ideal for our purposes. Following is the itinerary:

Leave New York	January 15th
Arrive Havana	January 18th
(Four and one-half days and five nights in Havana.)	
Leave Havana	January 23rd
Arrive Port au Prince	January 24th
Leave Port au Prince	January 24th
Arrive Trujillo City (Santo Domingo)	January 26th
Leave Trujillo City (Santa Domingo)	January 26th
Arrive San Juan (Puerto Rico).....	January 27th
Leave San Juan (Puerto Rico).....	January 27th
Arrive New York	January 31st

The main part of the Congress will be held in Havana. There will be three days of scientific sessions with operative clinics. These will be divided into sections for the various specialties. This year we have four new sections: tuberculosis, gastro-enterology, dentistry, and industrial medicine. Meetings will be arranged with our medical colleagues at the other ports of call.

The Hotel Savoy-Plaza in New York and the National Hotel in Havana will be our official hotels.

Travelways, Inc., have chartered the "Queen of Bermuda" on behalf of our Association and will act as our official travel agents. As this Congress promises to be the most successful ever held by the Association, it would be highly advisable to book reservations as early as possible with Travelways, Inc., who will make every effort to satisfy the requirements of the members of the Congress. Applications for reservations should be addressed to the Pan-American Medical Association at 745 Fifth Avenue, New York City.

The program committee would be pleased to receive applications for the presentation of scientific contributions.

OBITUARIES

DOCTOR JACOB M. STOOKSBURY

Dr. Jacob M. Stooksbury, who was born at Forkvale, in the eastern part of Tennessee on June 9, 1869, died June 24, 1937, at sixty-eight years of age. Dr. Stooksbury enjoyed comfortable although not vigorous health until a few days before his death. The cause of death was called cerebral vascular accident, perhaps hemorrhage.

Dr. Stooksbury was a graduate of Chattanooga College in 1897. He was a member of the county, state and American Medical Association.

NOTICE OF DEATHS

(Insufficient data for obituary.)

Dr. G. M. Clifton, Norman, June 22, 1937.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Latent Form of Chronic Appendicitis with Bands, and with Associated Nervous and Arterial Syndromes (L'Appendicite Chronique Avec Brides A Forme Latente. Syndromes Nerveux et Arteriels Associes.) By Jean LeSage, Montreal. *L'Union Medicale du Canada*, June, 1937, Page 601.

The author of the article is a gastro-enterologist. In it there is an attempt to explain some rather unusual symptoms on the basis of a chronic appendicitis. In the beginning of the article the statement is made that aside from recurrent acute appendicitis there may be a relapsing appendicitis, or a chronic appendicitis following an acute attack. This is followed by the statement: "More interesting because more complex and difficult of interpretation, chronic appendicitis from the outset presents itself as a syndrome which evolves 'independently of any previous acute appendicitis'."

Apparently, the author believes that a latent chronic appendicitis might explain some remarkably unusual manifestations illustrated by the following case report:

A man fifty-eight years of age, hard worker (occupation not stated), excessive eater ("fort mangeur"), inveterate smoker ("grand fumeur de cigares"), presented himself October 1, 1936, complaining of attacks of weakness ("crises d'asthenie") over a period of about ten years, the attacks being accompanied by somnolence, amnesia, aerophagia, eructations of gas, and distention of the abdomen. The attacks were more frequent and more pronounced after taking food. In addition, there was complaint of vertigo, sweating and, at one time, falling with biting of the tongue ("une chute par terre avec morsure de la langue"), without incontinence of urine and without aura.

After repeated hesitations the patient recalled that at about the age of fifteen years he had had a series of "acute indigestions" with colics.

There was pallor, drooping features, slow speech. Pulse 65. Blood pressure 130/70.

Abdomen distended generally, with predominance in the pre-hepatic region where the liver dullness was masked. There was a small umbilical hernia. There was no distinct point of tenderness.

Management based upon the hypothesis that there was an intestinal stasis, probably associated with an anomaly of the colon, brought but little improvement. At this point there was a barium enema with x-ray examination. Nothing striking was observed except in the cecal region, this region being elbowed ("coudee") toward the median line, and the appendix, observed twenty-four hours after the barium enema, in a rectilinear position, and apparently fixed at its two extremities.

X-ray studies of the stomach, oesophagus, duodenum, gall bladder were negative. The conclu-

sion was that there was great probability of a perityphilitis with the appendix in a fixed retrocecal position.

The patient was operated upon by Dr. Lefrancois under ether anesthesia December 22, 1936. This is the note dictated by the surgeon: "Subject very fat. The bottom of the cecum adherent to the external wall of abdomen by a band which was sectioned. Appendix retrocecal, adherent (former attack almost certain, notwithstanding the difficulty of the patient in recalling it). Liberation very laborious. Sectioned without inverting the stump." The pathological diagnosis was productive appendicitis ("appendicite productive").

On January 31, 1937, the patient complained of weakness, somnolence after meals, numbness and paresthesia of the legs. Notwithstanding these complaints the author says that there was great amelioration of the general condition. On April 21, 1937, he was seen again after having been submitted to "an hepatic cure." The author says that he was much relieved, but still had attacks of asthenia when he fell into the old sin of using tobacco ("s'il retombe dans le vieux peche du tabagisme").

COMMENTS: Following the report there is a long historical review of the subject of chronic appendicitis, many authors being quoted, but I shall not go into that. After I read the article with a good deal of care I had the distinct conviction that the author had not established the pathological situation that he was apparently trying to establish. Granting that there is a pathological entity that might be properly denominated "chronic appendicitis," the disease, in the experience of the average surgeon, is not manifested by asthenia, sweating and falling to the ground with biting of the tongue. In such a case, especially at the age of fifty-eight, it is not only a questionable, but, in my judgment, a dangerous procedure to subject a patient to an abdominal exploration without a more definite and a more solid basis.

LeRoy Long.

P-Carbamino Phenyl Arsonic Acid in the Treatment of Trichomonas Vaginalis Vaginitis. By Charles Drabkin, St. Louis, Mo. *The American Journal of Obstetrics and Gynecology*, May, 1937, Page 846.

He reports twenty-one cases of trichomonas vaginalis vaginitis treated with carbarsone. There were two recurrences which he thought were probably re-infections from the husband. The medication was given in a rather elaborate manner. During the first week of treatment a suppository containing two grains of carbarsone was used night and morning in the rectum. During the first week five grains of carbarsone with five grains of sodium bicarbonate were injected into the vagina each night and a suppository was also introduced each morning. During the second week the morning rectal suppository was omitted and the rectal therapy was limited to one suppository each night. During the second week the vaginal therapy was

continued as above. During the third week all carbarsone was discontinued in the morning and at that time the patient took a douche containing one tablespoonful of vinegar to the pint of lukewarm water. During the third week a carbarsone suppository was inserted into the vagina every night and into the rectum every other night.

During menstruation the morning acid douche and night vaginal suppository were continued.

The author considers the rectal treatment and the treatments during menstruation as of considerable importance.

He emphasizes the fact that the patient can carry out this treatment herself, avoiding all forms of office treatment which are painful and which are frequently not systematically followed.

COMMENTS

For the past three and one-half to four years I have treated all patients with trichomonas vaginalis vaginitis with carbarsone vaginal suppositories, feeling that the parasitocidal action of the contained arsenic was of prime importance in eradicating the infestation. My experience with this drug has been a most happy one. I have used it in several hundred patients. One may expect symptomatic relief in practically all instances within four to five days.

Its application in my hands has been much more simply carried out than the routine outlined in the above article. I have prescribed twelve vaginal suppositories to be used one each night, and inserted deep into the vagina. Patients have been instructed to take a douche in the evening prior to insertion as desired only. The rectum has not been treated with the drug. The patients have not employed carbarsone during menstruation.

Because of an occasional recurrence, during the past two years, floraquin tablets (Searle Co.) have been used following the carbarsone medication. These have been employed by inserting one tablet into the vagina every night for ten to twelve nights after completion of carbarsone and thereafter one every other night or twice weekly for as long as one month's time. With the addition of the floraquin tablets, there have been no recurrences.

It is certainly true that the most logical origin for the original infestation is the rectum and in certain selected cases, it is a wise procedure to also treat the rectum. Naturally, patients should have general instruction relative to cleanliness after defecation.

It is well to add that patients who have had the disease for a long time, should have general physical examination and therapeutic measures directed toward improving the general condition. We have seen a number of patients who have had symptoms of trichomonas vaginalis infestation from ten to fifteen years without relief.

All of these patients have gained relief from carbarsone vaginal suppositories but they are more apt to have recurrences if the general condition is not improved to normal. Wendell Long.

Diffuse Adenomatosis of the Colon. By Fred W. Rankin, M.D. and Allen E. Grimes, M.D., Lexington, Ky. *The Journal of the American Medical Association*, February 27, 1937.

It is indicated that diffuse adenomatosis of the colon has been regarded as a clinical entity for many years, but that the proper conception of the histopathology, especially with reference to malignant tendency, has not existed very long.

Adenomatosis may be present from anus to cecum, but eight times more frequently found in the rectosigmoid and rectum. This is particularly significant in connection with malignancy which is also more frequently found in these locations.

Reports by various investigators seem to indicate a familial tendency.

Lockhart-Mummery is quoted as classifying adenomatosis, pathologically and etiologically, so that they represent four groups: (1) True multiple adenomas. (2) Polyps found in association with hyperplastic tuberculosis. (3) Polyps found in association with old strictures of the colon. (4) Polypoid conditions of the mucosa which result from ulcerative colitis.

A distinction is made between polyposis which "may mean only one or several polyps," and polyposidosis which "indicates that the entire inner surface of the large bowel, from the anus to the cecum, contains polyp-like elevations."

While the authors say, "The cause of true adenomatosis has not been determined," the article appears to indicate the important relationship existing between it and ulcerative and inflammatory processes.

One of the authors (Rankin), in collaboration with Fitz-Gibbon and Grappan, found that, histologically, the tumors fell into three major divisions: (1) Nodular and pedunculated, without indication of being very liable to malignant change; (2) polyps, sometimes very small, with structural changes in both the epithelium and the connective tissue elements; (3) an accentuated form of group two in which the epithelium "had been arrested at so early a state that differentiation was very slight." In this group the polyps were sometimes no larger than a split pea.

The patients have been of an average age of thirty years, but there are exceptions.

"The chief complaint usually is concerned with some alteration in the bowel habitus, particularly diarrhea." There is sometimes a history of recurrent cramps, significant of intermittent obstruction, and "often due to intussusception."

There ought to be a methodical study of the intestinal tract, and proper steps should be taken to eliminate amebiasis, ulcerative colitis, the dysenteries, and other infectious processes.

Attention is directed to the information that might be acquired by digital examination of the lower rectum, the following statement being made: "Quite often the diagnosis is unfolded to the mind's eye by the simple procedure of placing an examining finger into the rectum, where nodular polyps await and do not defy discovery."

Because of the distinct tendency to extensive malignancy, Rankin advises removal of the colon at about its junction with the rectum, the radical operation of colectomy being always preceded about six months by an ileostomy. It has been observed that after an ileostomy "the patient's weight usually registered an appreciable increase, the secondary anemia was frequently overcome without aid of transfusion, and the patient's general health was more sturdy and able to withstand the shock of a major surgical procedure."

Emphasis is placed upon the necessity of a preliminary ileostomy because it permits the colon to be at rest, with "peristalsis at low ebb." In addition, "the ileum is given time for necessary adjustment vital to restoration of fluid balance. At first the substance issuing from the ileostomy is

liquid and more or less continuous, but in time it is altered in consistency to a semi-solid state."

In many cases an attempt is made to spare the rectum, destroying the masses in the rectum by fulguration. The rectum is spared because of the possibility and great desirability of restoring the continuity of the intestinal tract by anastomosis of the ileum to the upper part of the rectum.

The general scheme of operative treatment is summed up in the following quotation from the article: "In any individual case the order may vary because of specific indications, but in a general way we prefer to do an ileostomy, waiting six months during which time the polyps are destroyed, and then doing a subtotal colectomy and finally the anastomosis at a subsequent operation. Then, when one is assured of the adequate function of the anastomosis, the ileostomy may be closed under local anesthesia."

Not only is there a long wait—usually about six months—from the time of the ileostomy to the operation for the removal of the colon, but there is another long wait—from three to six months—from the time of the colectomy to the time when anastomosis of the ileum with the rectum is done, it being understood that at the time of the colectomy the end of the remaining rectosigmoid has been closed and invaginated.

Rankin and his associates report a series of thirteen cases, in seven of which the entire colon and rectum were removed by multiple procedures, and in six cases the colon was removed to the rectosigmoid junction. "In the earlier cases the more radical total colectomy was done for both lesions. Now it is reserved for chronic ulcerative colitis."

In other words, as this reporter understands it, when there is not chronic ulcerative colitis there is an attempt to spare the rectum so that a subsequent anastomosis of the ileum to the upper end of the rectum would be possible.

In the series of thirteen there was one operative death following the second stage colectomy. Another patient died eighteen months following the completed operation from recurrence of carcinoma.

LeRoy Long.

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.
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Injuries of the Hands Due to Shattered Porcelain Handles of Water Faucets. Emerson J. Steenrod, M.D., Ralph K. Ghormley, M.D., F.A.C.S., and Winchell McCraig, M.D., F.A.C.S., Rochester. S. G. & O., May, 1937.

The authors report twelve cases of injuries to the hands from porcelain handles of water faucets. They describe the various kinds of injuries which they have encountered in detail.

They point out that most of these cases are best done under brachial block anesthesia, a bloodless field, and absolute sterile conditions. They also point out the advisability of careful neurological examination in each case.

AUTHORS' SUMMARY: Porcelain handles of water faucets are a potential source of serious injury to the hands. The surgeon who sees the patient immediately after the injury has the greatest responsibility and the best opportunity for securing a favorable result. The use of brachial block and general anesthesia has been discussed. The

acute injuries of the hand should be carefully cleansed, thoroughly examined, and properly treated so that latent deformity, which may be the result of infection or severed tendons and nerves, can be prevented or at least minimized. The tendon of the flexor pollicis longus muscle and the branches of the median nerve were found to be parts most frequently involved in this type of injury. When the lacerations are extensive it may be necessary to use tendon grafts and skin grafts. Suture of nerve, when indicated, should be performed at once. In cases in which this is delayed, a careful neurological examination should be made so that secondary suture may be facilitated at the time of exploration. Active movement of the hand and physical therapy should be instituted very early.

COMMENT: I have seen two cases of injuries to the hand by porcelain handles of water faucets. One of these was a minor injury, the other involved the median nerve and the tendons of the second and third fingers. There was definite disability following the second case.

I think that in general these cases are treated just as other lacerations of the hand. I believe it is well to hospitalize these cases and treat them as major injuries. As the author points out the surgeon who sees the case first is the man that can do the most good.

Ox-fascia Transplant Operation for Ptosis. H. Rommel Hildreth, St. Louis. *Southern Medical Journal*, May, 1937.

The author describes his method for ptosis of the upper eye lid by utilization of ox-fascia. He states that the principal innovation in his technique is to use the fascia from the ox rather than autogenous fascia.

He describes in detail the technique employed.

Blair in 1932 published a long series of cases in which he used the fascial sling. Other men have used various kinds of suture material.

COMMENT: It is interesting to note that someone is publishing an operation which is really only a modification of an old one.

Dr. Spaeth gave an exhibit at the last A. M. A. which is really comprehensive on the subject of ptosis of the eye lids. In other words there are iron clad indications for various types of cases. It is important to choose the right type of surgery for children and naturally the type varies with each case.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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On the Treatment of Tuberculosis Spondylitis in Children. H. Wahren. *Acta Orthopaedica Scandinavica*, VII, 177, 1936.

Twenty-four cases of tuberculosis of the spine of children under fourteen years of age were observed for from two to fourteen years following the dates of the fusion operations. The patients were kept in plaster beds until the lesions were no longer progressive and were then operated upon according to Albee's technique. After from two to three months more on plaster beds, plaster jackets were supplied. In most of the cases the patients were supported also by leather jackets.

One child of seven years died immediately fol-

lowing the operation, and one of eight years, three years after the operation. The remaining results are tabulated as: good, fifteen; fair, two; and bad, one. There were five cases of fracture of the graft and two of fracture of the tibia. Further progress of the lesion followed the operation in three cases. A relationship between kyphosis juvenilis and tuberculous spondylitis was suggested by one case in which the typical wedging of the thoracic vertebrae was observed six years following the fusion operation at fifteen years of age.

Subchondral Tuberculosis Sequestra. Jerome G. Finger. *Annals of Surgery, CIV, 1080, Dec. 1936.*

A six-year review of material seen in Dr. Steindler's Clinic, a statistical analysis of eighty-six clinically recognized cases, and a histopathologic study of twenty anatomical specimens serve as a basis for the author's conclusions.

The sequestrum is a subchondral tuberculous necrosis appearing roentgenographically as a wedge-shaped area of increased density, not lying "free" as does a pyogenic sequestrum. The density may be caused by deposits of lime salt in tuberculous caseous material, or by lack of absorption of bone in the necrotic focus, while the surrounding living bone becomes porotic and the picture may be confused by hypertrophic arthritis. The diagnosis is simple and absolute only when the focus is separated and extended toward or into the joint. It is often a diagnostic feature of joint tuberculosis.

Bone infection is usually secondary to joint disease, being primary in only twenty per cent of the cases in this study, invasion occurring at the joint margin where the cartilage is thin. The infarct type of wedge necrosis of bone, due to vascular occlusion, occurs rarely.

The sequestrum when formed can be changed only by: (1) trauma (it is extruded into the joint and ground into fragments or expelled through a sinus); or (2) molecular disintegration. It may be encapsulated in fibrous tissue and remain unchanged indefinitely.

The article is excellently illustrated with some thirty-six histopathological and roentgenographic reproductions.

Sciatic Pain and Its Relief by Operations on Muscle and Fascia. Albert H. Freiberg. *Archives of Surgery, XXXIV, 337, February, 1937.*

When the piriformis muscle is under tension it can, through its contiguity with the fibers that make up the sciatic nerve, produce a sciatica. The tension may result from muscle spasm incidental to disease of the sacro-illiac joint (which it bridges) or to disease of the muscle itself. The positive response in the Lasegue test and the symptomatic relief obtained by subperiosteal stripping of the gluteus maximus or by fasciotomy of the fascia lata can be traced to changes in the tension of the piriformis. In addition to this, section of the piriformis, an operation which more directly attacks the cause of the sciatica, has been tried and found successful. Although only three such cases are reported, it is implied that other such operations have been performed, with satisfactory results. It is emphasized that complete studies of the factors causing the muscle spasm are necessary before symptomatic relief may be obtained by myofascial operations which release the piriformis tension.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

The Gold Ball Implant. Moses Freiburger, M.D., New York. *Archives of Ophthalmology, May, 1937.*

Ophthalmic surgeons for the past fifty years have used various implants following an enucleation. Some of the various things used are fat, cartilage, bone, ivory, celluloid, paraffin, peat and agar-agar. None of these have been successful. The gold or glass ball are the most popular implants being now used, preferably the gold ball.

The technic of the implantation is discussed. The author in his initial efforts used too large a gold ball. He now uses one not greater than fourteen mm. in diameter. Another early error of his was failure to control oozing of blood within Tenon's capsule. Another important factor is the overlapping of the edges of Tenon's capsule rather than the mere approximation of same when suturing. He decries the mere suturing of the conjunctiva as advocated by some authors.

The technic as given is: four per cent cocaine is placed in the conjunctival sac. The knife is passed around the limbus and the conjunctiva undermined back to the equator. Not more than one cc. of a four per cent cocaine solution is now used to block the three branches of the ophthalmic division of the trigeminal nerve and the ciliary ganglion. The four recti muscles are sutured with 000 catgut to the conjunctiva. The ends of the catgut are cut long and held with a forceps to one side. The eyeball is now removed with as little loss of tissue as possible. Hemorrhage is controlled with cotton saturated with hot saline. A dry packing is then inserted into the socket and the edges of Tenon's capsule are sutured. There are three or four sutures placed about two mm. back from the cut edge of Tenon's capsule, each being carried to the opposite side in a similar manner. The dry packing is removed and the gold ball inserted. The center sutures are tied first and then those on each side, allowing the margins of the capsule to overlap. Sometimes a running suture is used for reinforcement. No. 2 braided silk is used to close the conjunctiva. The four catgut sutures (for muscles) which were mentioned at the beginning are next tied, loosely. He prefers to complete the dressing with a scarlet red ointment. A week later the silk sutures are removed.

Tonsillectomy as a Cure for Peritonsillar Abscess. Forest W. Mercia, Lakewood, Ohio. *Archives of Otolaryngology, May, 1937.*

The removal of the tonsil in case of peritonsillar abscess is not advocated generally by American laryngologists. In many foreign countries this is a routine procedure and their reports show that this is not attended by the complications that Americans believe exist.

Reports of the experiences of other authors who do a tonsillectomy at this time are reviewed.

The inadequacy of the routine treatment of peritonsillar abscess is discussed. The incision frequently has to be reopened every day or so until the drainage has stopped, in the meantime the pain, temperature and difficulty of swallowing continue.

As the author states, pain is the outstanding symptom of this disease. If a tonsillectomy is performed this is relieved immediately. The patient usually is unable to eat or drink for several days

before the abscess is opened. Immediately following the tonsillectomy the patient is able to take nourishment better than he has for several days and as a result the general condition is improved.

A rational surgical procedure, says the author, is the removal of the tonsil at the time of the formation of the abscess. The anatomy is given: muscle on three sides of the tonsil; anterior is the palatoglossus muscle; posterior palatopharyngeus muscle; external is the superior constrictor muscle of the pharynx. Separation from its bed occurs more easily in the upper half of the fossa and this is the site most frequently of the peritonsillar abscess.

In removal of the tonsil the protective wall of infiltration in the tissues is not disturbed. If the operator is careful the infection is not any more liable to spread than by simple incision. He tries to free the upper portion of the tonsil before the abscess is ruptured. The majority of his cases had nitrous oxide and ether anaesthesia. Electrocoagulation is used to control the bleeding. About the same time is required for healing as in an ordinary tonsillectomy. The technic of the operation is given in detail.

Twenty-one cases constitute the basis of the article.

Bacteriological and Experimental Researches on the Aetiology of Trachoma. Drs. A. Cuenod and R. Nataf, Tunis. British Journal of Ophthalmology, June, 1937.

As a result of more than thirty years of experimentation it has been, among other things, shown that there is an infecting virus. This has certain physiological characteristics.

The question asked is does this virus always remain invisible morphologically? In 1929 the authors published a paper entitled "Ultra-virus and Trachoma" in which different aetiological hypotheses were put forward. Since that time confirmation of material in that paper has taken place.

The researches of Charles Nicolle are discussed. "It being agreed that trachoma flourished under the same conditions as exanthemic typhus, and that the two nosographical charts of their world incidence were practically identical, it occurred to us that the louse and the Rickettsias bore some relation to trachomatous infection." One hundred twenty Busacca's publications (of Brazil) also advanced this theory of infection and he has demonstrated that the infra-organism is morphologically demonstrable.

The authors in their own laboratory after careful examination of Giemsa-stained trachoma follicles concluded:

1. There is degeneration of the large mononuclear cells, known as epithelioid cells.
2. Lysis of the cytoplasm of these cells.
3. The presence of tiny granular dots (0.2 to 0.5 μ) which are very special and very characteristic in the cytoplasm, which may be adherent to the nucleus, or if this longer exists may be present as debris in its neighbourhood.
4. The same dots are present in the protoplasm of epithelial cells as Halberstaedter-Prowaczek inclusions.
5. These granular dots may be found in a free state.

The author describes his latest experiments with inoculation of guinea pigs, laboratory bred lice, Barbary ape (magot), etc. From these he concludes: "Bacteriological and experimental re-

searches have been made showing that the trachomatous virus has a close relationship with an infra-organism of the Rickettsia family—it seems to be proven that trachoma is due to an infection of the conjunctiva with Rickettsias, these being the active principle of the trachomatous virus—we consider that we have proved both morphologically and experimentally that trachoma is a Rickettsiosis, and that the louse forms a reservoir, and is perhaps one of the vectors of trachomatous virus, and probably the principal one."

Observations on the Semicircular Canals. E. W. Peet, London. The Journal of Laryngology and Otology, June, 1937.

The object of the paper is to show that the anatomical relationship of the semicircular canals of one ear to those of the other is inconstant and varies within wide limits.

The relationship of the semicircular canals has been undisputed since in 1874, when Crum Brown of Edinburgh said: "Now we have six semicircular canals, three in one ear and three in the other, and I find in all the animals that I have examined that the exterior canal of one ear is very nearly in the same plane as that of the other; while the superior canal of one ear is nearly parallel to the posterior canal of the other."

European skulls of different ages are used by the author. Photographs are reproduced as evidence of his contention. He concludes: The anatomical relationship of the semicircular canals of one ear to those of the other is inconstant. Examination of the skulls of two children reveals a difference in angle of no less than forty-one degrees between the axis of the superior canal of one side and the posterior canal of the other side. In the four adult skulls, the angle between the posterior canal of one side and the superior canal of the other varies from fourteen degrees to twenty degrees. It would appear that this angle increases with the cephalic index (max. breadth x 100)

(max. length)

The work of McNally and Tait on the labyrinths of frogs is discussed briefly. Ewald's work on the vertical canal is also discussed. Apparently movement of the endolymph either towards or away from the ampulla stimulates the horizontal canal. The producing of nystagmus by the hot and cold caloric tests tend to bear this out.

Opinions regarding the action of the vertical canals are uniform. Stimulation of a superior vertical canal occurs by a rapid tilting movement towards its ampulla. A tilt in the opposite direction produces stimulation to a lesser degree; this would be the greatest stimulus to the contralateral posterior canal; i. e. if they were parallel.

The author's opinion is that variations from parallelism would not influence this mode of action unless they were excessive.

**PRONTYLIN IN TYPHOID FEVER
M. D. Carnell, Okmulgee**

Prontylin (sulfanilamide) has been used with great success in infectious cases due to the diplococcus, staphylococcus, and streptococcus, and I have seen many critical cases respond readily to prontylin intramuscularly, and prontylin by mouth. Such brilliant results prompted me to use it in a case of typhoid fever.

P. L. E., female, age nine, became ill on May 13, 1937, with a severe chill lasting two hours, the temperature rapidly rising to 104.2 per orum; pulse 128, and respiration 28. Total W. B. C. 5400; differ-

ential, lymph. 29 per cent, seg. 59 per cent. stab. 9 per cent, and monocytes 3 per cent. She became rapidly toxic; muttering delirium; involuntary peagreen stools; sordes collected heavily on tongue, lips and teeth, the tongue dry, hard and fissured, and abdominal tympanites very marked. Widal positive.

One half tablet of prontylin was administered every four hours. Three days later the temperature dropped to 99° F. All outward symptoms abated. The sordes disappeared as if by magic and the tongue became clear and moist. No other drugs were given. The temperature ranged from 99° F. in the morning to 102° F. in the afternoon, and on the twenty-first day of the disease the temperature dropped to normal and has remained so, this now being the twenty-ninth day since the onset of the disease.

The American College of Physicians Will Meet in New York City, April 4-8, 1938

The twenty-second annual session of the American College of Physicians will be held in New York City, with headquarters at the Waldorf-Astoria Hotel, April 4-8, 1938.

Dr. James H. Means, of Boston, is President of the College, and will have charge of the program of general scientific sessions. Dr. James Alex. Miller, of New York City, has been appointed General Chairman of the Session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of Round Table Discussions to be conducted at headquarters.

Benzedrine Sulfate in Post-Encephalitic Parkinsonism

P. Solomon, R. S. Mitchell and M. Prinzmetal (Journal A. M. A., May 22, 1937, 198:1765), report a series of twenty-eight cases suffering from classic post-encephalitic parkinsonism were treated with either Benzedrine Sulfate (benzyl methyl carbina-mine sulfate, S. K. F.) alone or with the addition of scopolamine or stramonium. Results according to symptoms were as follows:

Symptom	No. of patients exhibiting symptoms	Per cent improved as to symptoms
Lack of energy	26	96%
Inability to work	28	79%
Lack of strength	26	73%
Tremor	16	44%
Rigidity	26	77%
Drowsiness	24	95%
Oculo-gyric crisis	8	100%

Fifteen, or fifty-three per cent, were improved from Benzedrine Sulfate alone and twenty-six, or ninety-three per cent, reported improvement from Benzedrine Sulfate with the addition of stramonium or scopolamine. Benzedrine Sulfate was found to be most effective when used in combination with these two drugs. Results in oculogyric crisis were particularly striking. This symptom was eliminated in six and greatly diminished in two of the eight patients subject to these attacks.

Additional experiments were tried with ten cases of arteriosclerotic parkinsonism and in a selected group of twenty-two psychoneurotics. Results were not favorable in these conditions and in some cases untoward effects developed.

The average maintenance dose in post-encephalitic parkinsonism was ten to twenty mg. two or three times a day, although as much as 160 mg.

a day for three weeks was taken by one patient without apparent harm. No evidences of tolerance or habit-formation were observed.

Subcutaneous Emphysema in Bronchial Asthma: Report of Case

J. B. Kirsner, Chicago (Journal A. M. A., June 12, 1937), believes the pathologic physiology of subcutaneous emphysema in bronchial asthma to be due to the rupture of pulmonary alveoli as a consequence of increased intrapleural and intra-alveolar pressure occasioned by the marked difficulty in expiration, typical of bronchospasm. The rupture of an emphysematous bleb or of a cavity apparently permits air to extend through the interstitial tissue of the lung into the loose cellular tissue of the mediastinum and from there to the subcutaneous tissue of the neck and face and over the entire body. The courses that air may take in the production of mediastinal and subcutaneous emphysema have been especially well studied experimentally by Ballon and Francis. They have pointed out some of the consequences of increased mediastinal pressure, particularly the hyperventilation or hypoventilation of the lungs—stagnation of blood in the pulmonary bed, edema of the lungs and development of fluid in the pericardial cavity. In the author's case, hypoventilation could well explain some of the respiratory difficulty; none of the other complications were observed. His normal results with venous pressures are consistent with the results of other investigators in this respect. The significance of the area of consolidation in the left lower lobe seems difficult to evaluate. Interstitial emphysema following influenzal bronchopneumonia has been noted by Kountz and Alexander, Kelman and Harris, among others. Its occurrence has been attributed to toxic action of the infecting agent on the lung parenchyma, on the respiratory center producing dyspnea, cyanosis and resultant emphysema and to ulceration of the bronchial mucous membrane. In the present case it would seem that the acute asthma was the primary factor in the development of the clinical picture with the pulmonary consolidation a secondary complication.

"Pilot Error" and Oxygen Want, With Description of a New Oxygen Face Tent

Alvan L. Barach, New York (Journal A. M. A., May 29, 1937), warns that oxygen want is capable of producing mental impairment and certain physiologic alterations at altitudes at which transcontinental commercial flying now takes place. These disturbances in function of the human organism, induced by a reduced tension of oxygen in the tissues, are aggravated by certain forms of fatigue neurosis. Pilots are apt to develop a characteristic form of fatigue psychoneurosis called aeroneurosis. The combined effect of slight impairment of mental functioning induced by moderate anoxia and overt or latent aeroneurosis may become an influential factor in pilot error. Safety in airplane travel may be increased by recognition of these factors and a prompt application of suitable methods of preventing them by the adoption of compulsory oxygen inhalation for pilots flying at altitudes at or above ten thousand to twelve thousand feet. The author describes a simple oxygen face tent which is practicable, efficient and comfortable. It appears to be a suitable method of oxygen inhalation for pilots, as well as being applicable to the treatment of oxygen want in clinical disease.

More Medical Misinformation From Consumer's Research

Consumer's Research, which formerly limited its publications largely to the confidential bulletin circulated among its subscribers, now comes forth with *Consumers' Digest*, published by Editor Schlink with a view, no doubt, to reaching a larger audience. An article on "Diet and Common Colds" again emphasizes the inherent fallacy of discussions of medical subjects by untrained writers. This article calls attention to "an important study" by Frederick Hoelzel. Some comments by Hoelzel were reported briefly in *Science* in 1928 when he was a guest investigator in the Department of Physiology of the University of Chicago. He then wrote that observations over a period of years on one subject, himself, suggested a relation between diet and the incidence of colds. Hoelzel had on several occasions practiced periods of fasting. He remained in good health while fasting but invariably contracted a cold when he resumed eating. He reasoned that the diet affected the degree of hydration of the tissues, which in turn was related to susceptibility to colds. High carbohydrate diets increased hydration and susceptibility, and high fat diets decreased both, he thought. Contrary to substantial evidence, Hoelzel suggested that the relative freedom of arctic explorers from colds is due to the decreased carbohydrate intake rather than to the absence of bacteria. In 1934 Hoelzel wrote "I have abandoned the idea of using a high fat diet, such as I advocated in 1928, for the prevention of colds and nutritional hydration." This second article was ignored by the article in *Consumers' Digest*, which states that a diet consisting of adequate protein with a minimum of carbohydrate "proved to be" the most efficacious in the prevention of colds, while a diet high in carbohydrate with a restricted protein intake was accompanied by difficulty with colds. The recommended diet for the prevention of colds would consist of liberal portions of lean meat, poultry, fish, cheese, eggs and other animal products, with a restricted intake of potatoes, corn, beans, cereal, pastry, candy, syrup, soft drinks, ice cream, sherbet, alcoholic liquors, sweet fruits and—of all things—fruit juices. Again, apparently without adequate consultation with medical authority, and this time even without adequate survey of recently available evidence, *Consumer's Research* presumes to dispense bad medical advice to its perhaps too trusting readers. —*Journal A. M. A.*, May 15, 1937.

Giantism: Report of Case

Of one hundred twenty-four letters and cards requesting reprints of and/or making comments about a recent paper of his on giantism, seventy-one informed Charles D. Humberd, Barnard, Mo., (*Journal A. M. A.*, February 13, 1937), of a remarkable schoolboy giant at Alton, Ill. This giant has received much newspaper and magazine publicity; the author's clippings about and photographs of him, over a period of eight years, fill two large scrapbooks. But the popular accounts of his height vary so much in stating his dimensions that their accuracy was questionable. He recorded the history and measurement at his home, June 2, 1936. The giant is a white youth, single, aged eighteen years three and one-third months, is just completing the first semester of his freshman year in college. He is a precromegalic giant, eight feet three and one-quarter inches (252 cm.) tall, of phenomenal size, molded on a vast scale, colossal

and stupendous in bulk, truly Gargantuan in all his proportions, and symmetrically built. His anthropometric picture is given. His present weight, he says, is three hundred ninety-five pounds (179 Kg.) in ordinary clothes. The thick lips, coarse nose, increasing depth of the chin and general enlargement of the soft parts of the face, as noted when earlier photographs are compared, suggest that an acromegalizing process is already beginning and can be expected to become prominent in the near future.

Lipoma of Tongue

Ferris Smith, Grand Rapids, Mich. (*Journal A. M. A.*, February 13, 1937), reports a case of lipoma of the tongue in a woman of forty-five in whom the presenting mass was the size of an orange. She stated that she had first noted a mass the size of a pea on the right tip of her tongue seventeen years previously. Nine years later the mass had reached such a size that she had to discard her dentures and take soft foods only. She was "treated by a quack cancer specialist without relief" two years later. During the past six years she had remained at home "expecting to die from her cancer." The tumor was removed under local anesthesia. A flap of the epithelial covering was raised from the anterior third of the tumor and the mass was resected. The left half of the tongue was employed to repair the loss on the right side with a moderate foreshortening which interferes with neither speech nor function. Sixty days after operation some readjustment of the lips and cheeks had taken place. The histologic report was "simple lipoma." The mass weighed 320 gm. and measured eleven cm. by nine cm. by seven cm. The author gives the essential available data concerning the lipoma of the tongue: age of appearance, sex, origin, geographic location, histologic location, character, diagnosis and treatment.

Experimental Studies With Sulfanilamide and With Prontosil in Hemolytic Streptococcus Infections

Ralph R. Mellon, Paul Gross and Frank B. Cooper, Pittsburgh (*Journal A. M. A.*, May 29, 1937), report the results obtained by treating mice infected with hemolytic streptococci of different virulence levels with sulfanilamide and with prontosil. Two strains of hemolytic streptococci were used: the "Stoddard" strain, isolated from a case of septicemia at the Western Pennsylvania Hospital, and the "Pion" strain, which was obtained from the Pasteur Institute. The former had spontaneously acquired high virulence without animal passage and was used at the time of maximal virulence and also during a period of spontaneously diminishing virulence. The latter culture was considered moderately virulent. Both sulfanilamide and prontosil exhibit marked therapeutic effects in mice against hemolytic streptococcus infections. This effect obtains for strains of both medium and high virulence. Their experiments show no indication that phagocytosis is a factor in the mechanism of the therapeutic action of these drugs. Proper treatment of guinea-pigs with sulfanilamide results in a localization and rapid healing of experimental intradermal hemolytic streptococcus infections, which in the untreated animals may disseminate with fatal results. No qualitative changes in the character of the histologic response to the hemolytic streptococcus as a result of sulfanilamide administration have been noted.

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Carcinoma of the Pancreas*

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OKLAHOMA CITY

Carcinoma of the pancreas is probably the most common of the diseases of that organ, at least the one most often recognized. The difficulty in differentiation from other diseases of the pancreas and from diseases of other organs in the upper abdomen makes it imperative that this condition be kept in mind as a possibility in cases presenting evidence of trouble in this region.

In canvassing the records of St. Anthony's and University Hospitals, carcinoma of the pancreas, in this locality, is apparently on the increase. In 1931 in St. Anthony's Hospital one case out of six thousand admissions was diagnosed carcinoma of the pancreas. In 1936 in the same institution nine cases of primary carcinoma of the pancreas were found out of approximately nine thousand admissions. Further studies showed that in the five-year interim there was considerable variation; in 1933 there were four cases out of six thousand admissions; in 1934 there were four cases out of seven thousand admissions.

The pancreas is comparable in its structure and susceptibility to the kidney. "The adult gland contains cells composing the excretory ducts and tubules leading from the acini, the larger ducts of Wirsung and Santorini, and the lower end of the bile duct; the pyramidal cells of the acini; the A and B (and possibly D) type of cell of the pancreatic islands (Langerhans); and

the cells of connective tissue, blood vessels, lymphatics, and nerves. That the cell types may give rise to characteristic tumors such as the adeno-carcinoma of the acinar cells, the cuboidal and cylindrical cell carcinoma of the pancreatic and bile ducts, or the minute adenoma of the B cells of the islands, is, of itself, interesting, but the problem becomes exceedingly intriguing when cells of the gland undergo a metaplasia to the type entirely foreign to its normal histological structure. Such a situation exists in the epitheloid or squamous cell carcinoma of the pancreas."¹

The pancreas furnishes digestive ferments which have to do with the proteolytic action on all types of food. The gland lies in the lesser abdominal cavity behind the stomach; the head of the gland lying close to the liver, gall bladder, and pylorus; the common duct frequently passing through the head of the pancreas.

Two particular types of trouble may produce a symptomatology common to malignancies of the pancreas, the interstitial and the parenchymatous types of pancreatitis. In the parenchymatous variety there is, as a rule, a marked enlargement of the gland so that the gland can be readily palpated, on examination of the abdomen, giving the feeling of a tumor mass. In the interstitial variety there is occasionally involvement of the head of the gland in which case, if the common duct passes through the head of the gland, pressure symptoms occur producing jaundice and other obstructive manifestations

*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 12, 1937.

simulating biliary tract disease. On the other hand if the head is not involved, in this particular type, thickening and enlargement of the gland with marked contractions occur producing compression upon the islands of Langerhans interfering with the endocrine function, so that glycosuria and hyperglycemia are manifested producing a true diabetic state.

Malignancies, according to McCallum,² are practically all adenomata, when occurring in the body of the gland. A tumor mass similar to that in parenchymatous pancreatitis can often be felt with sooner or later an involvement of the islands of Langerhans by direct extension without the evidence of biliary obstruction, at least until such time as secondary involvement of the liver, gall bladder, or common duct occurs. There is no evidence found suggesting a basic or preceding pancreatitis but a periductal or interstitial fibrosis is often found. When the tumor is limited to the body or the tail, involvement of the stomach by direct extension is by far the most common, sometimes first simply by adhesions and then by involvement of the posterior wall of the stomach by the tumor mass itself. In either case there should be an early interference with the motor action of the stomach which adds considerably to the original symptomatology.

In carcinoma of the head of the pancreas, even when the tumor is very small, sufficient swelling occurs to produce an obstruction of the common duct with a consequent enlargement or dilatation of the gall bladder and a congestion and cloudy swelling of the liver. The liver in a small percentage of cases enlarges rapidly, within a few weeks, filling the right abdominal cavity. The differentiation in this type of case from primary hepatic disease or stones in the common duct, or both, is difficult. The jaundice comes on gradually, there is little or no pain, thus presenting a characteristic picture of the so-called catarrhal jaundice, the gall bladder is palpable and considerably enlarged. Drainage of the gall bladder gives quite prompt relief with a rapid subsidence of the size of the liver.

Conversely, disease of the pancreas may occur secondarily to disease of the duo-

denum, common duct, or gall bladder. This is rare, however, except in the case of stones producing obstruction. Cabot³ has reported two cases produced by rupture of a duodenal ulcer. Eusterman⁴ has reported one hundred thirty-eight cases of carcinoma of the pancreas, one of which was associated with a perforated ulcer. The percentage of biliary calculi associated with pancreatitis and carcinoma of the pancreas is somewhat more frequent. In the cases at St. Anthony's Hospital gall stones were found in twenty-five per cent of the cases diagnosed carcinoma and in one case which proved on autopsy to be pancreatitis. The percentage of calculi in seventy cases at the University Hospital showed calculi in fifteen per cent so that in at least a limited number of cases obstruction does play an important part in the development.

In seventeen cases (St. Anthony's Hospital), diagnosed carcinoma, only one case of pancreatitis (non-malignant) was found at operation or autopsy. In the group of thirty-seven cases (University Hospital) one case proved to be hepatitis, one carcinoma of the common bile duct, and two non-malignant disease of the pancreas.

The sex incidence varied slightly from the usual report. In the smaller group twenty-two per cent were women, seventy-eight per cent men. In the University Hospital group thirty-one per cent were in women and sixty-nine in men. Oppenheim⁵ and his co-workers reported thirty cases with a ratio of six to one, the greater percentage being in men.

The average age in men was found to be 67.33 years, the oldest seventy-three, the youngest thirty-nine. The average age in women fifty-seven, the oldest seventy-three, the youngest forty. Showing the majority in men in the sixth decade and the fifth decade in women.

The duration of symptoms before admission to the hospital varied from one week to fourteen years. Such a prolonged history as fourteen years must be explained by the presence of disease other than carcinoma. It was found that eight of those with a history of eighteen months or more had stones in the gall bladder; three were known diabetics; in one was found a subphrenic abscess with old ad-

hésions; one a chronic ulcer of the duodenum; and one patient had been a sufferer from amebiasis for twenty years. In one case marked jaundice had been present for nine months, three years previously a gall bladder anastomosis to the duodenum had been done which completely relieved the patient for two years although there was found at the time of the operation a very small tumor on the head of the pancreas which later developed rapidly producing death.

The recognition of carcinoma of the pancreas, at least early, by direct evidence is difficult. Pain is common in the deep epigastrium, in both pancreatitis and carcinoma, is constant and not affected by the intake of food. Pain in the lower dorsal region, often very severe and constant, sometimes simulating that of tabes dorsalis, should always be viewed with suspicion. Enlarged gall bladder is present in nearly all cases, usually tenderness is absent or slight. The liver is always enlarged with varying degrees as to extent. The finding of a tumor mass in the epigastrium is not a dependable sign as it frequently can not be palpated until the disease is well advanced. However, the finding of a mass irregular in outline, hard and immovable in the epigastrium, if it can be differentiated from an enlargement of the left lobe of the liver, and not tender on pressure, is a dependable diagnostic point. This mass is most often felt in the mid-line or to the left of the mid-line of the epigastrium. In malignant tumors of the common duct or gall bladder a mass is commonly found in the right hypogastrium, is not tender, rarely productive of pain, conforming to Courvoisier's law.

Progressive weakness is complained of constantly by these patients seemingly out of proportion to the early findings. There is always an excessive amount of fat in the stools, varying from ten per cent to sixty per cent, free fat is found, the stools being copious and very bulky. In obstructive jaundice, other than that due to the pancreas, the stools are clay colored, usually formed, not bulky, and do not contain free fat to any extent.

Hydrochloric acid is low, usually absent, unless it is influenced by some other con-

ditions in the stomach or duodenum as, e. g., peptic ulcer. Achlorhydria, however, is the usual thing in all types of pancreatic disease having to do with the external secretions as well as in diseases of the gall bladder and liver associated with jaundice, so this is of little help in differentiation.

Many tests for determination of absorption of pancreatic ferments, by examination of stools and urine, have been devised, none of which has proved to be of any great practical value.

Elman and McCaughan⁶ reported, in 1927, a new method of determining the amylase content in the blood which proved quite dependable, enabling them to differentiate pancreatitis, carcinoma, and pancreatic cyst. The amount of amylase in the blood was seemingly not affected by the presence of jaundice when the pancreas was not diseased. This test gives promise of great practical value in routine clinical work. The normal amount of amylase ranging from four to six units; in pancreatitis nine to one hundred fifty units, more often higher; in pancreatic cyst fifteen to twenty-five; in carcinoma, very early, as high as twenty-five units, dropping in one to three weeks to one to three units. The decrease being due to a decrease in the secretory action of the pancreas by reason of atrophy of the acini. This test is of special value in ruling out tumor at the head of the pancreas, particularly with a silent jaundice.

Thus we see symptoms of carcinoma of the pancreas, when present, arise from pressure on nerves, blood vessels, and bile ducts and due to a disturbance of the digestive function.

Jaundice is an early symptom, often the symptom which sends the patient to the doctor, and is too frequently diagnosed painless jaundice or catarrhal jaundice. Unfortunately the patient is advised not to submit to surgery, as occurred in one of our recent cases, so that valuable time is lost.

Loss of weight and particularly strength, loss of appetite with nausea, anemia; in other words cachexia appears early. Pain in the epigastrium or back, as already referred to, is third in point of appearance. Incidentally, this is relieved by cholecysto-

duodenostomy, in the majority of instances, suggesting the distended gall bladder as a possible cause of pain.

Various obscure abdominal symptoms may appear, *e. g.*, if the tumor lies over the aorta, the so-called pancreas-aorta syndrome may be found, a pulsating tumor simulating an aortic aneurism.

Carcinoma of the pancreas then is to be suspected in patients of middle age who without apparent cause show loss of weight and strength, abhorrence of fatty foods, low hydrochloric acid content in the stomach, constant pain in the epigastrium, mild or severe, particularly, if referable to the back, and, if jaundice, with an enlarged gall bladder, not tender. With these above conditions the diagnosis is well nigh made.

The x-ray is of little value except occasionally in cases of pressure by the tumor against the curve of the duodenum producing distortion with some obstructive evidence. The x-ray of the gall bladder is of help in determining the presence of stones and the size of the gall bladder even though it does not fill well due to liver involvement. In connection with the use of the Iso-Iodeikon dye, the determination of the amount of retention in the blood serum thirty minutes after the injection of the dye intravenously, after the method of Everts Graham, aids in determining the amount of liver damage, hence, a valuable test for appraising the safety of the patient in surgery. Forty per cent or more retention of the dye indicates sufficient damage to the liver to make surgery inadvisable.

Treatment of these cases promises very little. In 1934 Handley⁷ reported the treatment of seven patients of pancreatic cancer with implanted radium. Of these one had remained cured for a period of fourteen years; one two years; one ten months; the other four died during subsequent laparotomies. In recent years attention has been turned to radiology (Laroquette,⁷ in 1927, reported the first cure by deep x-ray therapy. The patient was said to have returned to normal eight months after the beginning of treatment).

In five cases at St. Anthony's Hospital treated with deep x-ray therapy one lived, after treatment, two months with no ap-

parent effect of the treatment on the tumor; one showed an improvement and lived for one year; one died six months later; and two showed no effect whatever.

Kaplan² states, "The treatment of carcinoma of the pancreas by radiation therapy is palliative only. These tumors as a class are radio resistant. Some palliation, however, can be expected from high voltage x-ray anteriorly and posteriorly over the epigastric area. Converging beams from the right to the left epigastric areas may be done. This dosage is governed by the general condition of the patient."⁸

Although reasoning by analogy if these cases can be diagnosed, early extirpation of the pancreas will, in all probability, in the future give us some hope. However, very little has been done up to date with this operation. The pancreas, while seemingly a very important gland, can be safely done away with. The organism adjusting itself very rapidly (with proper management and the use of insulin), to the absence of the gland. This is demonstrated readily in functional insufficiency. Much can be done to alleviate the suffering and to prolong life by the simple procedure of giving hydrochloric acid, a high protein with low fat and low carbohydrate diet, as the pancreatic function varies with the acidity of the stomach, even in normal cases. The procedure however which relieves pain and jaundice and prolongs life is the cholecystoduodenostomy.

Judd and Parker,⁹ in 1928, published an analyses of thirty-four cases of anastomosis for tumor of the head of the pancreas. Of these one who survived the operation lived eighteen months, one fifteen months, one nine months, one seven months, two six months, one five months, two four months and one three months. One of our cases at St. Anthony's Hospital survived two years in comparative comfort after the anastomosis. This should be done as early as the case can be recognized and before damage has been done to the liver by reason of the obstruction.

Hence, while this disease is not as common as many others it comprises approximately three per cent of all carcinoma cases. This should be constantly borne in mind in order to bring about an early recognition of the condition.

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* * *

DISCUSSION

Dr. Milan F. McKinney:

It appears obvious from Dr. White's discussion that the one hope for comfort and increased length of life in this condition is surgery. This may be of two types—palliative by drainage of the gall bladder, or curative by removal of the pancreas. Early diagnosis is an essential factor in the treatment of any disease, and in some instances, the foundation or key to help depends upon early recognition. This is particularly true of malignancy of the

head of the pancreas. There are three conditions which are similar in their manifestations, carcinoma of the pancreas, stone in the common duct, carcinoma of the gall bladder or common duct. A fourth might be added, hepatitis, which is concomitant with each of these.

Diseases of the gall bladder or common duct, sufficient to cause jaundice, are accompanied by a pain in eighty per cent of cases, except in malignancy of the gall bladder, and then a tumor can be felt in the upper right quadrant which is firm, hard and often nodular, associated with tenderness at McKenzie's point.

A tumor is not felt under the right costal margin in carcinoma of the pancreas; the gall bladder can sometimes be palpated, but it is soft and smooth. Pain does not occur in the upper right quadrant but in the epigastrium or lower dorsal region.

Progressive weakness with or without jaundice is more pronounced in carcinoma of the pancreas than in any other disease.

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Placenta Previa With Discussion of an X-ray Aid*

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The third cause of death in obstetrics continues to be hemorrhage, and hemorrhage is the largest single symptom of placenta previa. It is my opinion that if we were more concerned about the early symptoms of placenta previa we would avoid a great many mishaps. Doctor Daily, of Chicago, says the patient primarily presenting the least symptoms may prove to be the most serious emergency when examined. At the University Hospital, when a case has been diagnosed placenta previa, we make it a rule not to let her leave undelivered; the risk is too great for both mother and child. I believe that statistics will prove this a good rule. In the State of Oklahoma, during the year of 1936, there were one hundred fifty-nine maternal

deaths; twenty-eight of these deaths were due to uterine hemorrhage, and seven of the twenty-eight were placenta previa. There were one thousand, two hundred twenty-three still-births, I do not know how many of that number were caused by placenta previa. I believe that we could reduce this mortality if we were more careful in making an early diagnosis and instituting treatment before it becomes an emergency. The statistics indicate that we are in the habit of passing on a small amount of uterine bleeding in late pregnancy as nothing to cause alarm. Surely, there should be no bleeding in the late months of pregnancy or to any extent during the first stage of labor. If there is, a thorough investigation should be made.

Schuman thinks that any painless, cause-

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less hemorrhage in the second half of pregnancy is placenta previa. The frequencies of placenta previa, some authorities give as about one, in one hundred thirty, to five hundred pregnancies. It is supposed to be about four to ten times more frequent in multipara than in primipara. The maternal mortality is from one per cent to eleven per cent; depending upon the method of treatment; the fetal mortality is from twenty-two per cent to sixty-eight per cent.

The records of the University Hospital over a period of ten years from 1927 to 1937 with three thousand, seven hundred sixty-four deliveries, show there were forty-four cases of placenta previa which is a very large percentage of the cases that come to the hospital. There was one maternal death; this death was attributed to severe toxemia and probably should be classed in premature separation of the placenta. There were seventeen fetal deaths; the treatment was very interesting. There were two Cesarean sections and twenty-one bag inductions, seven of which were followed by version. The maternal and fetal mortality at the University Hospital is just a little above the lowest reported by the hospitals which reported in the United States.

DIFFERENTIAL DIAGNOSIS OF PLACENTA PREVIA

When placenta previa is present, there is very definite uterine bleeding without pain. This is due to the separation of a low implanted placenta which is one located anywhere in the area of dilatation, a true placenta previa. This must be differentiated from premature separation of a normally implanted placenta. An abruptio placenta occurs only about once in five hundred pregnancies, which is less frequent than placenta previa. With abruptio placenta there usually are signs of toxemia preceding the hemorrhage. Trauma may be a cause of premature separation which of course would rule out placenta previa. Other causes of hemorrhages should be ruled out early, such as erosion of cervix, ectopic pregnancy, and carcinoma.

DIAGNOSIS

The symptoms of placenta previa usually make the diagnosis, but to determine

the type of placenta previa is not so easy. The finding of the placenta bruit just above the pubis is a fairly reliable indication.

It is now generally understood, that no matter how scant the bleeding may be, no attempt to confirm the diagnosis by vaginal or rectal examination should be made until the patient is in the hospital and everything is ready for the treatment of hemorrhage and shock, and even before we make this examination, unless there is too great a hemorrhage, we prefer the Ude and Urner method of injecting the bladder with sodium iodide solution and making an x-ray picture.

UDE AND URNER'S TECHNIC

The bladder is first emptied with a catheter and forty cc. of a twelve and one-half per cent solution of sodium iodide is instilled. The object of using only forty cc. of the solution is not to fill the bladder too full so that when the placenta presses on the bladder it will be seen between the bladder and the fetal head. We use a five per cent solution instead of twelve and one-half per cent and it seems to give us just as good a picture and less bladder irritation. A flat plate of the pelvis and lower abdomen is made. There should not be more than one centimeter's distance between the shadow of the bladder and that of the fetal head if the placenta is not in that area. Sometimes there is a widening of one side with a gradual turning out to the other side; this we believe to be due to partial placenta previa. In our judgment this is a great aid in diagnosing placenta previa from premature separation and also seems to help in determining the type of placenta previa.

CASE REPORTS

(These cases are all taken from the records of the University Hospital of the University of Oklahoma.)

I wish to show some slides of cases instilled with five per cent sodium iodide solution, and our findings. Of course this method of making a diagnosis is *not good* in breech and transverse presentation. The first one is:

CASE NUMBER ONE

Case No. 90662, age twenty-one, para I, LOP, began bleeding at eight and one-



CASE No. 90662

half months. Sudden, painless, uterine bleeding. Cross matched for transfusion. Temperature 98.6, pulse 80, hemaglobin 76 per cent, RBC 3,550,000, WBC 15,400. Cystogram five per cent sodium iodide solution forty cc. instilled.

Interpretation: Compression of upper contour of bladder, there is a soft tissue separating the head of the fetus from the filled bladder.

Vaginal examination: Bright bloody discharge, cervix median position, almost effaced, dilated four cm. (two fingers), placenta felt in cervix, posterior.

Diagnosis: Partial placenta previa, tip of placenta in cervix.

Treatment: Voorhees bag No. 5 inserted; medio-lateral episiotomy; low forceps; mother and child living.

CASE NUMBER TWO

Case No. 90076, age thirty-nine, para I, position LOA, pregnancy eight and one-half months. Sudden, painless, uterine hemorrhage. Cross matched for transfusion. Cystogram five per cent sodium iodide solution forty cc. instilled. Interpretation: Bladder to be compressed by an engaged head and possibly by a placenta previa.

Vaginal examination: In delivery room under sterile conditions. Placenta found posterior.



CASE No. 90076

Diagnosis: Placenta previa marginalis posterior.

Treatment: Membranes ruptures; Voorhees bag No. 5; vagina packed with gauze; spontaneous delivery; almost precipitated; mother and child living.

CASE NUMBER THREE

Case No. 87349, age twenty-eight, para III, position LOA, pregnancy seven and one-half months. Painless, profuse, vaginal bleeding; cross matched for transfusion. Hemoglobin 66 per cent, RBC 3,580,000, WBC 9,000. Cystogram five per cent sodium iodide solution forty cc. instilled.

Interpretation: The bladder shows an impression along the upper and right side. There is a separation from the head of



CASE NO. 87349

the fetus by a crescent form shadow which might represent the placenta.

Vaginal examination: In delivery room under sterile conditions. Cervix dilated four cm.

Diagnosis: Placenta previa marginalis right.

Treatment: Rupture membranes; spontaneous delivery; mother and child living.

CASE NUMBER FOUR

Case No. 90584, age thirty-three, para IV, position LOP. Sudden, causeless, painless, uterine hemorrhage. Hemoglobin 75 per cent, RBC 4,150,000, WBC 17,300, cross matched for transfusion. Cystogram five per cent hippuran thirty cc.

Interpretation: An impression of the upper wall; the head of the fetus projects about one and one-half cm. above the upper contour of the bladder.

Vaginal examination: Cervix effaced; membranes intact; dilated five cm.; placenta felt to left.

Diagnosis: Placenta previa partialis to the left.

Treatment: Rupture membranes; spontaneous delivery; mother and child living.

TREATMENT

Before any method of delivery is attempted we should control bleeding, treat shock and anemia.



CASE No. 90584

We must take into consideration the amount of blood lost, and with the sodium iodide injection of the bladder, and the aid of the x-ray; we can be reasonably sure of the type of placenta previa we are dealing with. Any patient that has had much loss of blood should be transfused, before any attempt is made to examine, or deliver the patient. This does not need to be a large transfusion; five hundred to eight hundred cc. is adequate. We use the citrate method with everything ready to treat hemorrhage and shock, when the patient is prepared sufficiently, we make a vaginal examination; not a rectal because we wish not only to make a positive diagnosis of the type of placenta previa, but to treat it vaginally, if necessary. If there is dilatation enough to feel the fetal head through the cervix, we know that we are not dealing with a central or total placenta previa but a partial or marginal type. In all cases of partial or marginal previa where there is effacement and more than four cm. dilatation, simple rupture of the membranes will start labor and is the treatment of choice. We very seldom use a bag.

Placenta previa totalis or centralis is an indication for Cesarean section. Placenta previa partialis where the patient is a primipara with long cervix undilated, we classify with total placenta previa and section.

The low, cervical Caserean section is preferred, because it allows vision of the placenta attachment and there is less tissue involved as the incision into the uterus is small and the baby is removed by forceps. One cc. of pituitary extract is given into the uterine muscle as soon as the baby is delivered, and when the placenta separates; if there is much bleeding at the placenta site, the bleeding vessels are caught by Ellis forceps and sutured with No. 1 plain catgut. If we are unable to stop the bleeding in this way, the uterine mucosa is folded on itself with mattress sutures. In packing of the uterus with gauze, pushing the end of the gauze out through the cervix into the vagina is a help to control bleeding. We usually remove it from twelve to twenty-four hours.

Version with rapid dilatation of the cervix and immediate extraction of the fetus

is an unnecessary and unsatisfactory method of delivery. It gives a very high maternal and fetal mortality.

SUMMARY

1. All cases of bleeding in the later months of pregnancy should be in the hospital for diagnosis as soon as possible after the first hemorrhage, and should be sent there immediately without vaginal examination or packing.
2. Treatment ought to be started as soon as the diagnosis is made.
3. All cases of central placenta previa

should be sectioned. The low cervical section is preferred as you are then in the area where the uterine bleeding is present and the bleeding vessels can be caught and tied or the uterine mucosa can be folded and sutured after the method of Doctor De Lee.

4. If there is not too much bleeding and shock, all cases should have the bladder injected with sodium iodide solution and x-ray taken to determine the type of previa which will show, unless the presentation is breech or transverse.

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The Nervous Child*

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In this discussion I shall deal briefly and in a somewhat elementary way with some of the ailments that occur in early life and at the same time I shall try to show how these are correlated with certain characteristics which are inherent in the makeup of the individual. I hope that such a presentation will be accepted as being in harmony with what might be called the present day trends in the practice of medicine. I think we have all sensed the fact that in order to widen our scope of usefulness we must in addition to studying diseases and their characteristics, give a proportionate amount of attention to the study of the people who are to have these diseases. We are obliged to better acquaint ourselves with our patient's constitution, his susceptibility to injurious agencies, his ability to carry loads (both physical and mental), and his capacity for satisfactorily adjusting himself to a complex and sometimes bewildering environment. We must not only strive to make the span of life longer, but we must help to make it more satisfactory as well.

The individuals dealt with here possess

no characteristics which do not belong, in some degree, to every normal person. But they do possess some of these characteristics to such a quantitative degree as to make them conspicuous. Since their chief claim to our attention seems to come from the fact that certain parts of their autonomic nervous systems are over active, a brief preliminary review of some of the things which are known about this system is in order.

Figure 1 is a diagram of the autonomic nervous system showing the brain, mid-brain and spinal cord on the left. The lines running out from the brain and cord represent the preganglionic neurones. The lines extending beyond these ganglia are the autonomic fibres running to the inner organs. The system is divided into three parts: (1) The cranial division connected with the upper part of the cord and mid-brain; (2) the sacral division connected with the lower part of the cord; (3) the sympathetic division connected with the intermediate part of the cord. The cranial and sacral divisions together constitute the parasympathetic side and, although supplying different regions, have a similar function which is always antagonistic to the sympathetic. The cranial division

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through the vagi depresses the activity of the heart, while the sympathetic stimulates it to greater activity. The cranial increases the glandular and muscular activity of digestion in the upper and the sacral in the lower part of the intestine, while the sympathetic diminishes these activities in both regions. Generally speaking, if the parasympathetic division accelerates, the sympathetic depresses; if the former inhibits, the latter stimulates.

Increased activity of the sympathetic system as a whole should produce, among other effects, dilatation of the pupils, acceleration of the pulse rate, increased blood pressure, a lowered sugar tolerance, lowered secretion and motility of the stomach and intestines and atonic constipation. Also a pure sympatheticotonia would cause the individual to be lively, easily excitable and subject to changeable moods.

Hyperactivity of the parasympathetic system (vago-tonia) affects mainly the cardio-vascular apparatus, the bronchi, the digestive tract and the skin. Through increased tone of the vagus the heart beats more slowly and may even develop extra systoles. If the vagal innervation of the bronchi is hyperactive there may be

spasms of bronchial muscles, swelling of the mucosa through vaso-dilation and increased production of thick mucus rich in eosinophiles (bronchial asthma). Vago-tonia produces in the digestive tract a variety of symptoms. In the lower part of the esophagus or in the cardia itself spasm may occur. The stomach may react by increased secretions (hyperacidity), hypermotility, spasms and vomiting. Gastric ulcer is common in later life. The intestine also reacts with hypermotility and hypersecretion. The increased peristalsis may be limited to the small intestine causing only rumbling or gurgling noises with colic or it may effect the whole intestine resulting in diarrhea as well. Spasm of the colon, especially in the lowest part causes spastic constipation. An abnormal production of large quantities of mucus results in mucous colitis. As to the skin, there is first a liability to increased perspiration. Since the sweat glands are supplied by fibres from the sympathetic system, this represents a hyperactivity of the whole autonomic nervous system rather than just the parasympathetic side. Abnormal reactions of the vessels of the skin are seen but these too represent a hyperactivity of the whole autonomic system.

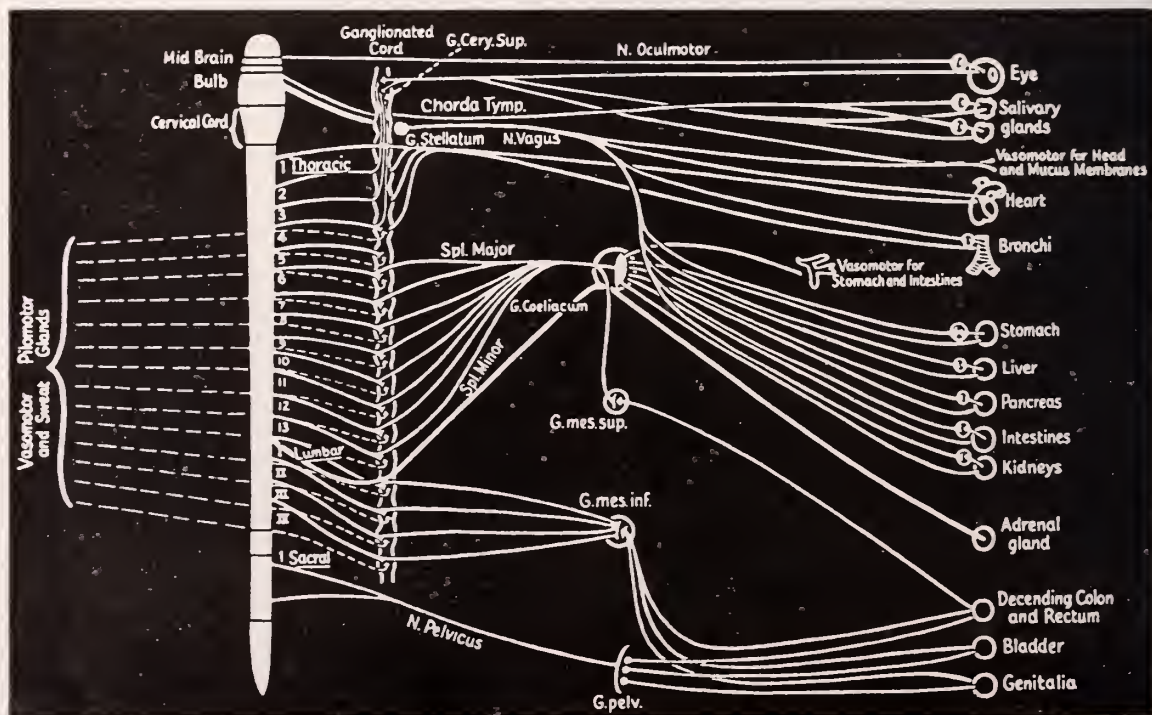


FIGURE 1. Schematic illustration of the autonomic nervous system (after Meyer and Gottlieb).

These reactions in mild form consist of red, white and mixed dermagraphia. A tendency to urticaria and other allergic reactions is not uncommon. In so-called vagotonic infants a tendency to exudative processes in the skin and mucous membranes is frequently seen. The carbohydrate tolerance is high. In a pure vagotonia the psychic behavior is slower and quieter than in the sympathicotonic person.

As a matter of fact, it seems that a pure sympathicotonia or a pure vagotonia rarely if ever exists as such. Overactivity of these opposite sets of nerves is patchy and may occur in more or less distinct segments of the two sides at the same time. For instance, it is fairly common to have a sympathicotonia in regard to the cardio-vascular and ocular innervation and at the same time a vagotonia in the digestive tract. Thus we may see all sorts of variable and inconstant reactions affecting the different organs and systems.

We shall now proceed to discuss briefly some of the common disturbances and ailments of early life which appear to be associated with overactivity of this system either in its entirety or, more often, in certain parts.

At birth the baby is apt to be a normal, healthy individual, in no way different from the average newly born child. He is put to the breast and gets along well for a while. But even during the first few days or weeks he may develop evidence of an overactive autonomic nervous system, particularly of the parasympathetic side. He may begin to frighten every one by spells of cyanosis and dyspnoea. A roentgenogram of the chest should be made since an enlarged thymus might be a possible explanation. If so, relief generally follows x-ray therapy. In the absence of an enlarged thymus a calcium deficiency is possible, and if present, is relieved by administering calcium, both by mouth and parenterally. Another factor which might be responsible is a low blood sugar which can be relieved by giving glucose and sugar by mouth or glucose intravenously. Atelectasis must also be looked for. But in many instances careful investigations do not reveal any cause for the symptoms and one may be justified in as-

suming that there is some autonomic imbalance.

The baby may escape the trouble just mentioned or successfully pass through it and then develop gastro-intestinal symptoms pointing to a vagotonia. After nursing he begins to twist and writhe about and show signs of distress until he finally brings up some of his food. This may rapidly develop into the well known pylorospasm where each nursing is followed by evident distress, with visible gastric peristalsis, until the entire feeding is expelled with a gush. There then follows a period of relaxation which is soon interrupted by the cry of hunger. The next feeding is gulped down rapidly only to return in a short time. If this continues, unrelieved, we soon see a starving, dehydrated infant who cries day and night and who may develop an elevation of temperature. Many such cases are relieved by beginning with one drop of a one to two thousand solution of atropine preceding each feeding and gradually increasing this until it either relieves the symptoms, causes a flushing of the skin or produces general abdominal distension. It acts by inhibiting or paralyzing the motor endings of the parasympathetic fibres. If either the second or third condition comes about before the symptoms can be relieved then the dosage can be reduced and phenobarbital given along with the atropine. We can begin with 1/16 grains before feeding every three or four hours and increase this, if necessary, to as much as 1/4 grain unless it produces undue drowsiness. Its action is that of a general nerve depressant. It is usually well tolerated and is often given over a period of several months without harm. Cases of definite hypertrophic pyloric stenosis will not be relieved by this or any other medical treatment but will generally do well following a pyloroplasty unless the condition is allowed to run too long before the operation is performed.

For those who escape or survive the above difficulties other trouble may be in store. In these instances the food, whether breast or the bottle, seems to be of the right amount and proper quality, is well taken and may produce satisfactory gains in weight. Still the child has much discomfort which appears to result from over

activity of the entire digestive tract. He sleeps badly, has frequent, loose, irritating bowel movements and spits up a good deal. He passes much mucus and sometimes blood but seems otherwise well and hardy. Changing from the breast to the bottle or from one type of food to another may give temporary relief with a return of the trouble sooner or later. Adjusting the relative amounts of fats, sugars and proteins gives no satisfactory results and lactic acid milk generally increases the symptoms. Efforts to correct the condition and make the baby more comfortable may result in a diet that is deficient and lead to malnutrition. These symptoms point to a vagotonia with allergy as a possible precipitating factor. It has been proven that when milk is first taken by young infants its proteins may be absorbed in antigen form and cause a specific sensitivity. Most of them get along reasonably well on a formula of evaporated milk, water and sugar with the protein broken down by being boiled one or two hours or longer. A good proportion of them will require small doses of phenobarbital every three or four hours. If necessary, this can be continued for weeks or even months without harm.

Simultaneously with or closely following the above condition one may begin to see manifestations of allergy with vagotonia in other parts of the body. The skin of the face and scalp becomes dry and roughened and starts to itch. In a comparatively short time a definite case of infantile eczema may develop with all the itching, discomfort and restlessness that go with it. Generally, it cannot be entirely relieved during the first year but can be managed fairly satisfactorily if the following measures are carried out. If the baby is on the breast keep him on it but try the effects of eliminating from the mother's diet such foods as eggs, milk and wheat or any such foods as have been known to cause indigestion or hives. If he is on the bottle use a formula of evaporated milk, water and sugar which is cooked one or two hours. Discontinue the use of soap and water on the eczematous areas and have them cleaned with olive oil or mineral oil. Use some mild ointment, preferably one containing small amounts of crude coal tar. Prevent scratching. If

necessary, give sufficient doses of phenobarbital to secure a reasonable amount of comfort and sleep. It will generally clear up during the second year.

The next condition to be mentioned is connected with the respiratory system and may not reveal itself until late during the first year or not until the second, third, fourth or even fifth year. It generally appears first during the winter months and is apt to show up suddenly during the night. We get an urgent call to see the child because he has awakened with a croupy cough and has difficult breathing. We find him sitting up in bed or in some one's arms, his breathing is rapid, labored and noisy and there is a hoarse, persistent cough. He has what we call spasmodic croup. He is made reasonably comfortable by carrying out some or all of the following procedures. Close the windows and warm the air in the room; apply warm fomentations to the throat and chest; if a croup kettle can be made available apply steam inhalations; give some mixture containing an expectorant (such as syrup of ipecac) with a sedative (such as paregoric, codeine, luminal or the bromides). Since the trouble is apt to get better during the day only to return at night for two or three nights the child should be kept in during the day and given the sedative expectorant mixture if he continues to wheeze or cough.

Again we may be called at most any hour of the day and find the child breathing very rapidly and with considerable difficulty. The temperature may show an elevation of only a degree or two but it is sometimes as high as 103 or 104. The pulse is rapid and a superficial impression may be that the child is dangerously ill with pneumonia. A closer inspection shows that the breathing difficulty is largely expiratory and that there is not the degree of toxemia and prostration as at first appeared. The stethoscope reveals a very noisy type of breathing with many musical rales, more pronounced on expiration and heard over the entire chest. Generally no areas of dullness or abnormal bronchial breathing are found. The apparent fact that it is a case of asthma and not a true pneumonia allows us to give a good prognosis and to predict that the child will probably be up and around in a very few

days. During the attack it is better to close the windows and shut out direct drafts. Adrenalin overcomes the vagotonia by stimulating the sympathetic side and gives satisfactory temporary relief. Suitable doses of ephedrine with atropine and some such sedative as codeine furnish less marked but more lasting results. Other attacks will very likely follow but if there are only one or two a year we may be satisfied to do what we can to relieve each one with the hope that the child will finally overcome the trouble. If the attacks appear to be of increasing frequency it is probably better to have a thorough investigation, including skin tests, in an effort to get at and correct the precipitating cause or causes.

The itching of the nose, paroxysms of sneezing, frequent and prolonged head colds with other evidences of hay fever are not so acute or sensational in the mode of onset. Still this condition is fairly common as these children grow older and is treated by methods corresponding to those used in adults. Well developed seasonal hay fever is not generally seen till later childhood.

Other characteristics commonly appear in the makeup of this kind of child. During the first year he is apt to have a good appetite and if given enough food that he can tolerate he gains weight well and weighs as much or more than the average for his age. He often does this in spite of the fact that he cries much, sleeps poorly, vomits some and has too many bowel movements. From almost the beginning he is an over active, over alert individual who is highly responsive to all sorts of stimuli and in whom the instincts that make for self preservation seem to stand out. In spite of careful handling, by the end of the first year or during the second year, he often becomes very apprehensive and is hard to examine or treat. Due to his hyperresponsiveness and over alertness he may begin to be wary of almost any procedure. Because of this fear and distrust, accurate weighing is something of a problem and he may seem to regard the stethoscope as a deathdealing weapon to be avoided at any cost. He may be so terrified by any ordinary procedure that bringing him to the office for an examina-

tion gets to be no small task. During such happy moments as he is not crying and objecting to something he is usually exploring and investigating so that, if his stay in the office is very much prolonged he is apt to leave things badly disarranged. Even at this early age his entire waking time is filled with activity; he does much climbing and investigating but generally takes care of himself reasonably well. If dealt with fairly and truthfully he can be reasoned with by the time he is three or four years old and becomes a very easy patient to handle. He generally continues to be healthy and robust unless he develops some chronic allergic condition which weakens him. The food allergy is usually outgrown and his eating is satisfactory unless too much care and parental solicitude interferes. In school he generally rates well unless his overactivity gets him into trouble and brings about an unpleasant relationship with the teacher or other students.

The study of this hyperactive, restless, curious individual is fascinating and if time permitted it could be carried through his later childhood and adolescence. There are problems which are peculiar to each age. It is not likely that any one child will show all the manifestations I have mentioned and in the sequence given; but, on the other hand, many characteristics have been left untouched. While there appears to be a fairly close correlation, I do not wish to convey the idea that all children possessed with an over active nervous system are allergic. Nor do I wish to infer that every allergic child has this sort of personality. Furthermore, I recognize the fact that many so-called nervous children are such purely as a result of being mismanaged and spoiled. I have tried, in this sketchy way, to present a type of child who is not abnormal but who represents an exaggeration of what is more or less common to all. I plead for a better understanding of him. He is more difficult to work with than the child who is orderly, obedient, quiet, reserved and well behaved but, at the same time, he is apt to become a more efficient member of society. Give him a chance and he will grow up to bear at least his fair share of the burdens. And he will go on and reproduce his kind—and the cycle will be repeated.

Ocular Malignancies*

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Malignant tumors of the eye form a very small fraction of the clinical material of a practicing ophthalmologist. While we have all seen cases of successful extirpation of malignant tumors of various types in this domain, the statistics of the surgical results obtained by any single operator or institution would be most inadequate.

The high percentage of cures among cases of carcinoma of the lids and conjunctiva is not surprising. The majority of these belong to the group of basal cell carcinoma of low malignancy but of great local destructive power. Occuring in or near the eye, they usually come to operation at an early stage.

The old adage that when misfortune overtakes one, it is usually followed by two more, and it has been my fortune or misfortune to have had three cases of malignancies in close proximity.

The first one of these cases came to me January 17, 1936—Wm. P. J., seventy-six years of age, farmer, who came with the diagnosis of pterygium on the left eye. He gave a history of a growth appearing on the left eye several years ago which developed very gradually and was very small at first, but the past year it had developed very rapidly and completely covering the pupil. He gave no history of trauma and has not had any pain at any time and probably would not have sought treatment had it not been that the growth obstructed the vision. The growth had the appearance of a pterygium and extended all the way across the cornea and was attached to the conjunctiva on either side but was not attached to the cornea. The growth was removed by dissecting back about five mm. from the cornea and an attempt was made to pull the conjunctiva down over the wound on each side, but it was so friable that the stitches would not

hold, so it was necessary to dissect farther from the cornea which should have been done in the first place, as no doubt all of the new growth had not been removed at first. The cornea had a steamy appearance but cleared up considerably after the operation and six months after, there was no recurrence and the cornea was very much clearer.

Pathological Report: The specimen consists of one small piece of grayish soft tissue. The center is bloody. Frozen sections show that the tissue consists throughout of irregular large groups of oval shaped cells. These cells are distinctly embryonal in type. They have a small acidophil nucleolus. The plasma of the cells has a varying staining affinity and the size is differing to a great degree. Some of them are twice as large as others and vacuolic and these major ones are showing deep staining. In Van Giesen stains it is revealed that these cells show reddish color which is evidence that they have been derived from connective tissue. Pathological diagnosis: Gliosarcoma.

The second case, Mrs. Mary C., age thirty-five, housewife, was first seen May 25, 1936, relative to a pain in her left eye and cloudy vision. Upon examination she was found to have an amaurotic, or cat's eye; tension below normal and upon ophthalmological examination, a tumor occupying possibly a third of the eyeball was discovered. A careful history elicited no record of any malignancies in the family and no history of trauma. Enucleation of the eye was recommended but the patient would not consent, but returned for observation over a period of two months, during which time the tumor had developed until the entire globe was filled with the tumor mass. The eye was enucleated July 1, 1936. The pathological report was as follows: The specimen shows on thin paraffin sections that it consists throughout of large elongated irregular cells. They contain a large pale nucleus irregular in shape and

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size. In the center an acidophilic nucleolus can be seen. These cells are of the spindle shape and large groups are interwoven. There is no capsule to be seen. In Van Giesen stain it is revealed that thin strands of fibrous tissue are between the alveolar arrangement. Only occasionally mitotic figures are to be seen. Pathological diagnosis: Spindle cell sarcoma.

Third case was Wm. P. Z., age two. This child was brought in for examination with a history that the swelling in the left eye was first noticed a year previous. At the same time they noticed that he had a convergent squint. Soon after this the pupil dilated and the eye was noticeably larger than the other, but he never seemed to experience any pain. A diagnosis of glioma of the retina was made and the eye was enucleated August 25th. The pathological report confirmed the diagnosis of glioma of the retina, round cell sarcoma type. On September 27th, one month and two days later, the orbit was again filled with tumor mass, which was removed and the orbit exenterated. October 5th, the tumor had recurred and radium was inserted, fifty mg. screened with one mm. of brass, twelve hundred mg. hours. The same treatment was repeated on December 12th, and on the following January 13th, the patient died.

Pathological Report: On several sections through tumor and retina the new growth shows the same structure. The retina is partly destroyed and very numerous small round cells are in crude and rosette like formations which are separated by a thin line of endothelium. The cells themselves show a difference in size and many mitotic figures. Between them sometimes glioma fibrils are to be seen. Also in the tissue which surrounds the eyeball and opticus nerve and in the fat tissue, the same kind of round cells are to be seen.

Friedenwald of the Wilmer Institute reports eighteen cases of malignancies in which enucleation was performed before extrabulbar extension had occurred, eleven or sixty-one per cent, survived for five years or more. Here again we have evidence of the importance of early diagnosis and treatment. Not all of these can be counted as permanent cures, for it is well

known that late development of metastatic growths, five, ten, even twenty years, after removal of the primary growth may occur in these cases.

Rodenbaugh reports several cases of orbital tumors treated by radiation and says those located in the conjunctiva and cornea, with a maximum conservation of normal tissue looking to clinical cure should be given first consideration. Types of localized tumors of the iris, or ciliary body, of doubtful nature, have been favorably influenced by radiation, and such treatment should receive consideration before resorting to radical surgical methods. It is of greater importance to secure clinical regression of a new growth, with conservation of essential structures, than to have a histological study, with loss of function.

Sarcoma of the orbit may arise from a great variety of cell types—originate in connective tissue, muscle, nerve, periosteum, fat or lymphocytes. An analysis of fourteen cases from the Memorial Hospital, New York, showed that the twelve patients who could be traced, lived, on an average, only one year after the first manifestation of the new growth. Regardless of the treatment, whether it was radiation, operation or both, a rapidly fatal course occurred. These figures are perhaps no more discouraging than those for sarcoma elsewhere in the body. It is usually said that the younger the patient the more malignant the tumor. This was true of the cases at the Memorial Hospital in which the youngest patient was fifteen months old and the tumor proved fatal in five months. The average age was ten years.

Swartz in the *Australian Medical Journal* reports a case of a woman forty-three years of age who consulted him for failing vision in her left eye and from his description, this case was similar to our number one case. She had a transverse growth across the left cornea six mm. wide extending from limbus to limbus; the conjunctiva appeared free from any growth and the cornea above and below the growth was quite clear and transparent. The growth itself was fleshy in appearance and raised from the cornea and had large blood vessels extending across it. Its appearance was like an overgrowth

of conjunctiva across the cornea. The eye itself was congested and there was no palpable enlargement of any lymphatic glands. She stated that the growth had been present for about two years commencing on the inner side of the eye and that in the last two months had grown considerably. There had been some pain earlier, but not for some time. The tumor was considered malignant and enucleation was advised at it would be impossible to preserve the sight. At the operation a considerable portion of the conjunctiva on each lateral side of the cornea was removed with the globe. The conjunctiva was quite free and appeared to be normal. One month after the operation she had one deep x-ray treatment. The pathological report showed a squamous cell carcinoma of the conjunctiva and limbus, which is quite rare.

In conclusion, will say that the terminal results in ocular malignancies depends on an early diagnosis, the age of the patient, and the type of tumor, as the glioma and melano-sarcoma do not give very encouraging results.

Glioma of the retina is a disease of the very young and if recognized early, an enucleation will often prevent metastasis, but in the infant I have reported the infection was so malignant and had developed to such an extent before I saw it that the prognosis was bad from the beginning. I recently refracted a young lady who had a glioma of the retina and the eye was enucleated twelve years ago by our old friend, Dr. Moulton, of Fort Smith, Arkansas; and there has never been any signs of metastasis and the socket continues to have a healthy appearance.

In case number two, the thirty-five year old lady with the spindle celled sarcoma, reported recently very much improved in health with no signs of metastasis. She has regained the twenty pounds which she lost while suffering with this eye.

I think we are all agreed that the end results depend a great deal upon an early diagnosis in cases of this type and whether the treatment is surgical or radiation, no time should be lost in the application of same.

Unusual Aspects of Lichen Planus*

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Lichen planus, while a somewhat uncommon cutaneous disease, is an extremely interesting and important one; interesting because of the bizarre lesions it sometimes gives rise to, and important because of its striking resemblance, in some aspects, to secondary syphilis. Like syphilis, it often occurs in the mouth and on the genitalia, annular lesions are not uncommon, and it ordinarily responds well to arsenic, bismuth and mercury medication.

The ordinary form, affecting the flexor aspects of the wrists and forearms and the inner aspects of the thighs, with the angu-

lar, red and subsequently violaceous papule, with its shining, flat and sometimes umbilicated top, forms a classical dermatological picture. Microscopically, too, the lichen planus papule presents a typical picture, which persists, although modified, in the aberrant types of the disease. Early there is a cellular infiltration about the upper horizontal layer of vessels and about the vascular network of the papillae. Then occurs a rapid acanthosis, with lateral stretching of the prickle cells. Finally hyperkeratosis ensues. During the rete changes, the cellular invasion proceeds in the pars papillaris and the upper part of the corium. An almost pathognomonic feature of this cellular infiltration is its sharp limitation, the lower border is al-

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most exactly straight. The above facts are elementary and well known to you dermatologists. I wish, however, to speak about several features of the disease which have been of especial interest to me.

The text books state that the causes of lichen planus are obscure. Some attempts have been made to prove it an infectious disease. In 1933 Jacob and Helmbold reported they had isolated an anaerobic, non-mobile, unencapsulated, non-spore bearing, gram negative bacillus, in twenty-five of twenty-eight cases examined. Furthermore in skin inoculations in human skin they were able, in a few cases, to produce lesions which clinically and histologically were lichen planus. Rudolph Bezecuy in 1934 reported implanting lesions from four human untreated cases into the corneas of six rabbits. In two to three weeks a blue-red urticarial eruption appeared on the animals, followed by a hemorrhagic erythema and alopecia. Desquamation then occurred, followed by regrowth of hair, all this occupying two to three months. In one case transference from animal to animal was successful. Most authors are impressed by the frequency of mental strain and anxiety in the history of sufferers from lichen planus. Eller, for instance, states that he had an unusual number of cases in men during the fall of the stock market. Little, however, reports that there was no increase in the disease in England during the World War. Goldsmith, too, examined great numbers of patients admitted to an English nerve hospital, and failed to find any increase in lichen planus cases over those found elsewhere. The fact will not down, however, that most of the patients are laboring under great mental stress. I have treated forty-six cases in the past ten years, and find that all but six gave a striking history. Illustrative of this factor are the following excerpts from patients' statements:

"Lost my husband one year ago, and feel lost in the world."

"My husband is a terrific drinker, and stays out nights frequently, without offering any reason."

"Have a urethral stricture, which no doctor seems to relieve."

"Have the care of my grandchildren,

whom I cannot afford to rear properly, because my daughter and her husband cannot get along together."

Goldsmith says that while there are no psychogenic skin diseases recognizable as such by sight, pathological cutaneous phenomena are conditioned by the psychological state, in their development, course and curability. One would expect this psychological influence on the skin to be as great, or greater, than upon any other organ, since it is the one of which the mind is most conscious. Reflection on these matters, and the fact that one of my patients recovered after four injections of manganese butyrate, make one wonder how much psychotherapy plays in the cure.

The matter of recurrence in lichen planus has incurred little comment. Little in his classical study of nearly two hundred fifty cases, reported one case with two recurrences. Pels and Ginsberg in 1929 reported one recurrent case, and in discussing the paper Michael remembered one case with two recurrences; Eichenlaub, two cases; and Ketron, one case. Lord, however, has had four cases of recurrences in thirty-three cases, nearly twelve per cent. I have had one case, a woman in mental distress because of her husband's infidelities. This patient recovered in ten weeks under mercury and x-ray therapy, but returned in four months with an acute lichen planus following an automobile wreck and a subsequent law suit.

Lesions of the buccal mucosa are extremely common in lichen planus, as are lesions upon the glans penis, vulva and about the anus. The buccal lesions are most common on the "cutaneous part" of this mucosa, from the commissures of the mouth backward to opposite the last molar, but may occur on the tongue and other areas. The eruption consists of superficial grayish white lesions in the form of minute puncta, linear streaks, annular lesions and reticulated or solid areas. There is very little roughness or none at all on palpation, and the subjective symptoms are trifling, a little burning or soreness. The disease in this location is more resistant to treatment than cutaneous lichen. Reports have been made by Howard Fox and others on lichen planus confined to the mouth. Recently Gougerot de-

scribed the disease of the oral mucosa accompanied by widespread itching but no eruption on the skin. It is, therefore, important in generalized pruritus to examine the mouth.

Bullous lesions have been reported in lichen planus by John Lane, Stillians, Cleveland and others, and lichen of the nails by Vero. I have never been able in my own cases to note any nail changes which I believed due to the disease in question. From the descriptions given there is a peculiar yellowish-gray discoloration of several parallel longitudinal striations, with brittleness and splitting of the nail plates. Subunguinal hyperkeratosis is apparently absent.

Considerable interest has been shown in this country in the irradiation of the spinal column in the treatment of lichen planus and other pruritic disorders. The reports of Driver and Foerster would indicate that this therapy is of considerable benefit. Different techniques have been used, corresponding to different ideas as to the

actual structures it is intended to influence, whether spinal nerve-roots or the sympathetic chain. In the deep technic cross-firing is utilized. The thoracic or lumbar regions, or both, are divided into four to eight areas, with an inclination of the x-ray tube to forty-five degrees, and each area given one-half to five-eighths erythema dose with the tube perpendicularly over the spinous processes. I have used the Gouin or superficial method in two cases of generalized acute lichen planus without any but local resolution of the cutaneous lesions. I have not attempted the deep technic for fear that radiation powerful enough to influence the spinal roots might also be powerful enough to produce more serious changes in the spinal cord. To me, the local treatment of the affected areas with x-ray, plus the intramuscular use of mercury or bismuth salts and occasionally an arsenical has proven a satisfactory scheme of treatment, if it is supplemented by attention to the patient's general health, and especially a sympathetic attitude towards his mental health.

The Treatment of Gonorrhea in the Male*

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CHAPTER VIII

CHRONIC PROSTATITIS—TREATMENT

The keynote of therapy in chronic prostatitis is digital massage *per rectum* of the infected gland. However, it must be emphasized that massage during the acute manifestations of the infection is definitely contraindicated. To do so not only invites distressing complications, but no therapeutic good is derived from the procedure.

The beneficial results obtained from massage of the chronically infected prostate are unique and hardly paralleled by any similar therapeutic procedure. We do not know the exact details as to why in-

fection is eliminated from the prostate by massage. Doubtless the mechanical propulsion of infected material from the glands and their ducts is an important but not a complete explanation for its benefit. Probably as much good follows the absorption in the blood stream of toxins and possibly bacteria induced by the massage and which in themselves produce an auto-vaccinating effect in the individual. Of minor importance is the reduction of congestion and improvement in circulation incident to the manipulation which favors cure. With these principles in mind, it can be realized that massage performed too frequently or too roughly defeats the very reasons by which it traces its therapeutic effectiveness; the gland becomes irritated

*This is the fourth installment of "The Treatment of Gonorrhea in the Male." Previous installments appeared in the May, June and July issues of The Journal.

and the system overly perfused with antigenic substances before their full curative effect is obtained.

Prostatic massage is performed using a very definite technic. Because many have not mastered the principles of its correct application explains much of the disappointing results obtained. One caution must be followed; and that is pain should never accompany the procedure. The production of pain either means that the technic is in error or the prostate is too acutely inflamed for such treatment.

A properly performed prostatic massage is begun by placing the patient in the knee chest position on an examining table. The finger is inserted in the rectum—*well lubricated*—and follows the gland upward as far laterally as possible with its ball pressed rather firmly down. The amount of pressure is dependent somewhat on the acuteness of the disease process as well as the tolerance of the individual. As the ball of the finger is brought forward parallel with the urethra, there is gained the impression of “give” to the deeper glandular tissues. The rectal mucosa must be disregarded in obtaining this sensory impression. Care must be exercised not to press or rub the superficial tissues but endeavor to obtain the peculiar feel of “springy resistance” that the glandular tissue imparts to the massaging finger. The sensation is not unlike that which one gains in the process of expressing milk from a cow’s udder. Each stroke must follow straight down from base to apex of the prostate and not in a circular or transverse course. Four to five strokes, each one progressively closer to the mid-line for each lobe is sufficient for a treatment with the last maneuver bringing the finger straight down the mid-line and out the anus which evacuates the massaged secretion past the sphincter to the urethral meatus. It must be inferred that massage should never produce pain, but should be vigorous enough to achieve results. Extreme gentleness is often inadequate for therapeutic results. However, judgment in this respect must be gained by observation and practice.

Massage of the prostate should not be performed more often than every three to five days; more frequent than this induces irritation and less often is not productive

of much benefit. Prostatic massage performed over long periods of time is also conducive to irritation. Ten to twelve treatments over a six-week period is sufficient for a course, following which it is advisable to allow a period of rest from this type of treatment.

What is to be done about the secondary urethritis in these long standing, persistent infections of the prostate? In the majority of instances the inflammation of the urethra seems to be of incidental importance and one observes as the prostatic focus improves the inflammatory reaction of the urethral mucosa tends to disappear spontaneously. Nevertheless, it may be necessary to direct the attention toward cleaning up an annoying catarrh in this region. It may be treated under two headings: medical and surgical.

Medical treatment comprises filling the bladder full of 1:8000 permanganate solution or some other mild antiseptic of similar concentration, and then performing massage followed by an evacuation of this solution. A stronger solution, preferably of the silver salts is then instilled by anterior-posterior technic and allowed to remain for a short time. If the case is quite recent, *i. e.*, within three or four months of initial infection, anterior-posterior injection is the preferable method of achieving bladder filling; but if it is not quite so early a catheter may be used.

Occasionally the physician has to resort to instrumental means for combatting infection in the prostate. As has been mentioned before, long standing irritations induce hyperplastic changes in the urethral mucosa from the stimulating effect irritating discharges have on the epithelium. Whenever these are present it is practically a futile gesture to treat the prostate and expect much results. Happily this does not occur very often; however, it is a possibility which one must consider as a complicating factor in each instance where there is a failure in response to therapy.

The easiest method of destroying these infiltrations, or hyperplasias is the passage of a large caliber sound several times at intervals of a week or ten days. Unfortunately this accomplishes little good in the majority of cases and one must then resort to more strenuous means of treat-

ment. By the use of an instillation of one or two cc. of one to three per cent silver nitrate instilled carefully in the posterior urethra, with a posterior instillator, a mild cauterizing effect is produced. It is probably wise to initiate such treatment using a slightly less concentrated solution in order to test out the tolerance of the individual. Two or three of such treatments will be usually found sufficient.

It must be understood that the rationale for the cure of the disease is purely for the purpose of correcting what surgical pathology is present and which is complicating a cure from the infection by hindering proper drainage from the glandular acini of the prostate. One should never use such treatment without asking himself whether the infection is sufficiently attenuated and dormant to merit such procedures. Probably there is no justification to use solutions of such strength for at least six or eight months following the initial attack of gonorrhea and it probably would be better to wait a year. Certainly if a definite stricture exists in the urethra the indication for instrumental dilatation is obvious. To use instruments earlier and without a definite therapeutic object in view is inexcusable and often disastrous.

Lastly, in a very, very few cases endoscopic or cystoscopic treatment may be indicated in order to obtain a cure. It is not within the province of this thesis to deal extensively with this phase of the problem other than to state it is no procedure for the inexperienced. Much irremedial harm has been done by the promiscuous use of so-called therapeutic endoscopic procedures. It is safer to treat a few extra months conservatively than to resort to such measures too early and injudiciously. They are literally last resorts of therapy.

As adjuncts to the treatment of chronic infection of the prostate are a rather important phase of the therapeutic attack it is well to discuss them at this time. The administration of three or four injections of neo-salvarsan, 0.3 to 0.45 gm., intravenously, is frequently followed by a rather rapid resolution of the infection. These injections are given at five-day intervals and are particularly indicated in the presence of coccal infections arising from focal origin. One must be careful for

the development of toxic reactions in the use of the drug.

Of late, sulfanilamide has been added to the list of drugs useful in the treatment of chronic infections of the prostate. It is administered in doses of thirty to forty grains daily, and its greatest value seems to be demonstrated in the earlier stages of gonococcal infection. However, in a few instances, much therapeutic good seems to be derived from its use in non-specific infections. In our experience sulfanilamide exerts its best benefit within the first ten days following its administration. If no improvement is noted in this length of time, it is practically useless to continue longer. We have also noticed that the drug seems to lose its effect when given over a period of time. Patients in whom a relapse of the infection has occurred, after taking the drug, will obtain little benefit from the administration of the drug when it is prescribed a second time.

Non-specific therapy in the form of foreign protein has many advocates and probably holds some value in the stimulation to cure. A favorite in our clinic is a preparation termed Omnadin, dispensed in ampoules and administered subcutaneously every two or three days in courses of six to eight injections. Little or no reaction arises from its use. In some cases it seems to aid in clearing the infection more rapidly.

Vaccines of a mixed character, preferably of an autogenous origin are also used. The prostatic secretion is cultured for whatever organisms are present and a vaccine is made from this growth. It is administered in ascending dosages for an indefinite period of time, the results obtained are variable but this method of treatment has sufficient background of success to be worthy of trial in refractory cases.

The use of heat administered locally to the prostate in the form of hot water rectal irrigations either by the open method using a short two-way rectal irrigation tip or by the closed method described as the Elliott treatment has been tried but has been found of doubtful value, except as a palliative treatment in acute manifestation of the disease. The former method has been found preferable so far as

acute prostatitis is concerned. The patient may apply the procedure in his own home using a connecting tube to his hot water supply and inserting the two-way nozzle in the rectum, adjusting the flow of water so far as temperature and pressure are concerned to suit his comfort. Because of the complexity of the apparatus and the bulkiness of the prostatic bag used in the Elliott treatment, this method has been found somewhat impractical in the routine treatment of prostatitis.

A procedure that probably should merit some consideration is the injection of medicaments directly through the perineum to the prostate for the purpose of sterilizing the gland. Mercurochrome is the drug recommended and is used in one per cent solution. The patient is placed in a lithotomy position and the needle directed through the perineum to the prostate with the aid of a finger in the rectum, as a guide. The prostate is injected in both of its lobes, three to five cc. of the solution to each lobe. The procedure is accompanied by considerable pain on the part of the patient. Beneficial results are reported by others, but a limited experience in our clinic has not proved particularly successful. The danger of inducing extensive sclerosis with the development later of a vesical neck obstruction to the urinary stream is a complication that should be borne in mind.

One may advise the patient who is suffering from chronic infection of the prostate that the element of time had best be forgotten. Two months to achieve a cure is remarkable. Four months is the usual amount of time many cases require to obtain results. One should never forget the general health, the daily hygiene, and rather important, the conduct that pertains to the sexual activities. It is probably wise to restrict sexual intercourse completely, even in the very chronic long standing cases.

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CHAPTER IX

ACUTE EPIDIDYMITIS

The onset of epididymitis during the course of gonococcal infection is always a discouraging complication of the disease. Not only does it produce a distressing period of disability for the affected indi-

vidual, but because its presence demands a cessation from regular treatment, chronicity of the infection is favored. However, of greater importance as far as the patient is concerned is the possibility of permanent sterility from an occlusion of the vas or epididymis following the inflammatory reaction. Fortunately, in most cases the disease involves only one side.

As regards the diagnosis of epididymitis, it is well known that students, as well as many doctors, call any painful swelling of the scrotal contents an orchitis. It is well to keep in mind the majority of acute inflammatory conditions within the scrotum are epididymal, arising in most instances from either a gonococcal, a non-specific or a tubercular infectious origin. In most cases the infection can be traced from a similar prostatic or seminal vesicular disease focus, but occasionally epididymitis may occur from a hematogenous origin, from a focus elsewhere. Orchitis is a relatively rare disease entity and almost invariably is related either to mumps or trauma. The gonococcus practically never produces an orchitis.

In the examination of inflammatory conditions of the scrotal contents, the physician should learn to palpate the various individual anatomical structures in order to form an exact diagnosis. Even in instances where a gonococcal origin seems obvious, he should think twice before stating the condition is due to this disease. Repeated smears from the urethra and urinary sediment examined for the gonococcus were found negative. The presence of nodulation of the vas with thickening, and finding the same condition in the prostate, is the typical appearance of genital tuberculosis.

One clinical entity that may be mentioned is torsion of the cord. It is almost always confused with epididymitis and resembles it in its clinical onset. As early surgery is imperative in such instances, it is well to keep this condition in the list of diagnostic possibilities. A point of differentiation between the two conditions is when a severe, painful, scrotal swelling is not relieved by a firm strapping of the testicle, but on the contrary if pain seems to be aggravated a torsion is to be suspected.

What are the predisposing etiological factors responsible for an acute epididymitis during the course of a gonococcal infection? As has been discussed in the chapter on acute posterior urethritis, poor conduct on the part of the patient or mismanagement of the disease by the physician are potent reasons for the development of this complication. Sexual excitement, long automobile rides, the imbibing of alcohol and various other indiscretions by the patient are important contributory factors for the development of epididymitis. Prostatic massage during an acute posterior urethritis, early instrumentation, traumatizing instillations and irrigations on the part of the physician are often followed by epididymitis. Epididymitis has also been said to result from a reflux of infected urine up the ejaculatory duct and down the vas. For this reason, a wise precaution during gonorrhea is to warn the individual to not allow his bladder to become too distended during a gonorrheal infection.

The treatment of acute epididymitis may be medical or surgical. The medical treatment comprises essentially of cessation of all local treatment including massage of the prostate together with complete bed rest and proper immobilization of the scrotum by either an adhesive suspensory or a figure of eight muslin bandage. The technic for applying these dressings may be obtained from any standard text book. The administration of sedatives is usually necessary for the relief of pain. Cold applications are comforting, but the application of heat to the testicle through local diathermy has proven more efficacious in our hands in the shortening of the course of the disease. Provided the individual can tolerate the drug during the acute phase of the infection, sulfanilamide should be administered. In many cases particularly of gonococcal origin it seemed to definitely have some curative effect in lessening the swelling and relieving the pain. Daily intravenous administration of calcium gluconate has also proven a valuable adjunct to other treatment and seems definitely to alleviate some of the pain.

Under the above regime the great majority of patients are free of most of their pain and are able to return to light activities within three to five days. It must be

emphasized that relapses will occur unless care is exercised not only by the patient, but by the physician in his management of the disease. The scrotum must also be constantly immobilized with a well fitting suspensory for an indefinite period of time. If the average drug store support is used it should be carefully fitted as often there is allowed too much movement of the parts. Failure to properly immobilize the scrotum following an attack of epididymitis is a factor responsible for many recurrences.

Surgery in the form of epididymotomy is occasionally necessary when pain is not relieved by ordinary methods or a suppurative process is definitely present. However, surgery is rarely indicated in most instances. The statement that sterility results less often when epididymotomy is performed early, requires statistical proof which we have failed to find.

One word of warning that bears repetition is: urethral injections and especially prostatic massage should not be begun too soon after an acute attack. Because of the possibility of an exacerbation of the infection at least a week should elapse and then caution must be exercised with the first few treatments as often these predispose to a recurrence of the process.

(To be continued.)

Treatment of Ulcerative Colitis with Aluminum Hydroxide and Kaolin

In ulcerative colitis there is a raw ulcerating mucous membrane, and thus to obtain the maximal benefit from kaolin and aluminum hydroxide James B. Eyerly and Herbert C. Breuhaus, Chicago (Journal A. M. A., July 17, 1937), give it only by rectal retention. First, the colon is cleansed with a pint of warm water. In one hour this is followed by a retention enema consisting of a 3 to 5 ounce (60 to 150 Gm.) mixture of kaolin and aluminum hydroxide in from 3 to 5 ounces (90 to 150 cc.) of warm distilled water. The patient is instructed to retain this as long as there is no discomfort. Usually one retention a day is sufficient, but occasionally two are given. In this manner, larger doses of the mixture can be brought into direct contact with the inflamed mucous membrane without previous admixture with food and digestive juices. The diet must be of high caloric, nonirritating type and contain all vitamins necessary for normal health. Opium in some form is frequently used in the early stages if pain and excessive diarrhea are present. A consistent program carried out intelligently is essential if such cases are to be cured. The treatment of ulcerative colitis by aluminum hydroxide and kaolin mixture is rational.

THE JOURNAL

OF THE
Oklahoma State Medical Association

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McAlester, Oklahoma

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McAlester, Oklahoma

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The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester.

EDITORIAL

PLEASE READ THIS

Many County Medical Societies throughout the State make a practice of taking a vacation through the months of July and August and they will now be ready to resume their regular meetings in September and we want to suggest that every County Medical Society do its best to have attractive programs, well advertised, so that general attendance will be increased.

The President and Secretary in most County Medical Societies are held responsible for programs and attendance and I want to appeal to every officer to make every effort to build both membership and attendance between now and the Annual Meeting in May. With the reapportionment made to the House of Delegates at

the last Annual Meeting it will be necessary for us to increase our membership approximately two hundred in order to retain our three Delegates.

There are some eight hundred legal practitioners in the State who are not members of the Association. Of course all of these are not eligible to membership, as we still have some of the old Territorial physicians who are not graduates of recognized medical colleges and are therefore not eligible to membership. However, there are four hundred who are eligible and it is the duty of those who are now members to see to it that those men are brought into membership.

Not only should every effort be made by the officers of the County Medical Societies but the Councilors should see to it that all Counties not now organized take this opportunity to organize. And where there are not enough physicians to organize that these doctors affiliate with the Society of some neighboring County.

In the September issue of the Journal a double post card will be inserted in an effort to obtain subscriptions from doctors throughout the State who are not members of the State Medical Association. In this way it is hoped that we will contact non-members and interest them in the activities of the organization.

We can ill afford to lose a member of the House of Delegates of the American Medical Association as all three of our Delegates have belonged to the House for many years and have developed many contacts that are of value and are recognized as very influential members of this Body. All three can only be retained by Councilors, officers and individual members making a supreme effort to bring into membership all physicians who are eligible.

In order to facilitate the acquisition of a new member the Secretary will accept as dues the proportionate part of the dues equal to the number of months still remaining in this calendar year. In other words if three-fourths of the year has expired when this new member is acquired he will pay one-fourth of the Annual Dues, or \$2.00, and of course will be immediately placed on the mailing list for the Journal and his name submitted for

membership to the American Medical Association.

We have received every possible assistance during our legislative and economic activities from the American Medical Association. Their organized bureaus and departments have furnished us with most valuable information and assistance and certainly we must see to it that we do not lose any influence in this important organization, as we would should it be necessary for us to drop one of our delegates.

Let us hope for and expect a unanimous response to this appeal for the organization of ALL Counties and an increase in membership of at least two hundred physicians.

Editorial Notes—Personal and General

DR. J. A. MYERS, Chief of the Chest Clinic, University of Minnesota, and President of the National Tuberculosis Association, will be the guest speaker at the Post-Graduate Course on Tuberculosis to be held in Oklahoma City, October 13, 1937.

DR. E. H. SHULLER, McAlester, was elected president of the Southeastern Oklahoma Medical Association at the semi-annual meeting held in McAlester June 24th. The Journal erred last month in stating Dr. Shuler of Durant was elected.

DR. GLENN J. COLLINS, who has recently finished his residency in medicine at the University Hospital, Oklahoma City, is locating in McAlester for the practice of his profession. Dr. Collins is a graduate of the medical school of the University of Oklahoma. After his graduation he served a year as interne in the U. S. Army Hospital at Fort Sam Houston, Texas, following this with a year's service at the University Hospital. He will be connected with the McAlester Clinic.

DR. WM. J. TRAINOR of Tulsa is spending the summer at the Massachusetts General Hospital, doing special work on internal medicine with Doctors Bland, Sprague and Aub.

THE TULSA COUNTY COMMISSIONERS have declined to appropriate \$3,000.00, requested to carry on the venereal clinic which Dr. Pearce approved of when he appeared before the Tulsa County Medical Society in the spring.

DR. C. L. BORDER, formerly of Mangum, announces his removal to Oklahoma City where he will have offices in the American National Bank Building.

DR. J. W. CRAIG, Miami, has returned after a month's visit in Chicago, New York and Atlantic City.

DR. T. D. ROWLAND, Shawnee, is planning to spend a few months visiting and vacationing in

Europe after attending the American Legion convention in New York City in September.

DR. COYNE H. CAMPBELL and his family have returned to Oklahoma City where they will re-establish their home after a sojourn in Chicago where Dr. Campbell attended school.

DR. WALTER HARDY, Ardmore, is reported much improved from his recent illness.

DR. PAUL J. CRADEN, El Reno, has returned after a three weeks' vacation in Chicago, Philadelphia and St. Louis, where he attended clinical meetings.

DR. C. C. ALLEN, Frederick, is vacationing in Colorado.

Open Oklahoma City Office

We are glad to call your attention to the opening of the Optical Service Company's office in the Medical Arts Building, Oklahoma City. (Advertisement on Page XVII.)

Mr. Tracewell, who owns both the Kansas City and Oklahoma City office, has called on many of the ophthalmologists of Oklahoma and is very favorably known among the men practicing this special line of work. As he makes glasses for physicians ONLY this sort of company will certainly be welcome to Oklahoma.

Medico-Military Inactive Duty Training at Mayo Foundation

The ninth annual training course for Medical Department reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, Minnesota, October 3 to 16, 1937.

This training course was first inaugurated by the Seventh Corps Area at the request of the Mayo Foundation to give training in military medicine to the young medical men connected with the foundation. Other reserve officers requested permission to enroll and to take advantage of the opportunity to attend the clinical presentations during the morning hours. Such permission was granted and attendance has become so increasingly popular that it is now necessary to limit enrollment.

The program will follow the plan of past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoon and evening will be devoted to a medico-military program under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

This training is on an inactive duty status and is without expense to the government. Enrollment is open to all Army and Navy reservists of the Medical Department in good standing. Applications should be submitted to the Surgeon of the Seventh Corps Area, Omaha, Nebraska, or to the Surgeon of the Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

The Surgeons General of the Army and Navy have signified that they will attend and it is believed that the Surgeon General of the Public Health Service will also appear on the program.

News of the County Medical Societies

TULSA County Medical Society is enlarging its library and assembly room and when completed will be one of the best equipped in the southwest with a full time secretary in charge.

The regular meeting of the "FOUR COUNTIES" Medical Society was held in Shawnee, Oklahoma, June 19, 1937. About sixty doctors, a few with their wives, were present. The "Four Counties" Medical Society is composed of the members of Pottawatomie, Seminole, Hughes and Pontotoc County Medical Societies.

Dinner was served at the Aldridge Hotel at seven p. m., after which the Pontotoc County Medical Society furnished the following program:

"General Education as Related to the Practice of Medicine"—Dr. A. Lincheid, Ada, Oklahoma.

"Heart Disease in the Aged"—Dr. W. F. Dean, Ada, Oklahoma.

"Right Unilateral Pain in the Abdomen"—Dr. R. E. Cowling, Ada, Oklahoma.

Dr. Sam McKeel, president of the Oklahoma State Medical Association, made a short and interesting talk on the activities of the State Association.

RESOLUTIONS

DOCTOR JACOB MARION STOOKSBURY

At a recent meeting, the Pottawatomie County Medical Society enacted the following resolution:

Whereas, our good personal friend, Dr. Jacob Marion Stooksbury, has been called from his work,

Whereas, we recognize in him one of our most valued and conscientious members,

Be It Resolved, that we deeply feel the loss of his untimely passing; that we recognize that his place as a good man cannot be filled.

Be It Further Resolved, that a copy of these resolutions be sent to the family of Dr. Stooksbury, a copy to the State Journal, one to the First Presbyterian Church and a copy placed on our records.

W. M. Gallaher, M.D., Chairman,
G. S. Baxter, M.D.

Why Children Should See "The Birth of a Baby"

Many physicians feel that every girl over twelve and every boy over fourteen should see the new talkie "The Birth of a Baby" which is being presented by the American Committee on Maternal Welfare at regular movie houses.

Most parents are either unable or unwilling to instruct their children in regard to menstruation, fertilization, pregnancy, and other natural phenomena. The result is that the child grows up in ignorance of these important matters, or what is worse, gets its "education" in the gutters.

If physicians will suggest it, parents will welcome the opportunity to take their children to witness this epoch-making film, "The Birth of a Baby," because it accurately, understandingly and without salaciousness, unfolds the true facts that these parents do not or can not now tell their own children.

OBITUARIES

DOCTOR JACOB MARION STOOKSBURY

On June 22, 1937, Dr. Jacob Marion Stooksbury, Shawnee, while enjoying his radio, suddenly fell from his chair unconscious and died two days later as a result of cerebral hemorrhage, at the age of sixty-eight years.

He was reared on a small farm in Tennessee and after graduating in medicine in 1897, he practiced general medicine in Knoxville, Tennessee, several years. After a short residence in Cement, Oklahoma, he moved to Shawnee in 1911, since which time he specialized in eye, ear, nose and throat work.

He was a devoted and valued member of Pottawatomie County Medical Society and Oklahoma State Medical Association during his whole professional career in this county. He was beloved and respected by all his co-workers. His life and professional conduct commanded the admiration of all who knew him. No greater epitaph could be said, "He was a good man." He was quiet, unassuming and unselfish.

DOCTOR CHARLES FLEETWOD HOUSE

Death claimed Dr. Charles Fleetwood House, sixty-four year old retired practitioner, of Walters, following an illness that originated in 1933. He passed away January 8th in that city.

Dr. House was born at Mansfield, Texas. He attended Baylor University, Texas University and Galveston medical school and received his medical degree from Tulane University, New Orleans, in 1901. He was for a time superintendent of Milford College. In 1907 he graduated from the New York Medical school and later did post graduate work in Boston, Chicago and St. Louis.

He was a thirty-second degree Mason, and a member of the American, state and county medical associations.

His wife, formerly Miss Helen Louise Householder, of Byers, Texas, survives. They were married in 1905.

Services held at Walters were followed by a funeral service at the mausoleum in Wichita Falls, Texas. Upon completion of a mausoleum at Byers, Texas, the body will rest there.

DOCTOR GEORGE MILLARD CLIFTON

Dr. George Millard Clifton died June 22, 1937, of coronary thrombosis at his home in Norman, Oklahoma. Dr. Clifton was a pioneer practicing physician of Oklahoma, having practiced thirty years in Cleveland County, of which twenty-five years were spent in Norman. He also practiced one year in Texas before coming to Oklahoma.

Dr. Clifton was born in Rochester, Minnesota, sixty years ago. He graduated from the University of Chicago, Department of Medicine and Surgery. He was a member of the American Medical Association.

RECENT DEATHS

(Data Insufficient for Obituaries)

Dr. A. A. West, Guthrie, July 4, 1937.

Dr. Chas. Hicks Howell, Meeker, June 30, 1937.

Dr. L. C. Lain, Oklahoma City, June 30, 1937.

Books Received and Reviewed

Books for review should be sent directly to Editor, Oklahoma State Medical Journal, McAlester Clinic Building, McAlester, Oklahoma. Acknowledgement of receipt will be made in these columns or on cards provided by the publishers.

RECEIVED

OPERATIVE SURGERY. By J. Shelton Horsley, M.D., and Isaac C. Bigger, M.D. Fourth Edition. Illustrated. C. V. Mosby Company, St. Louis, 1937. Cloth, \$15.00.

* * *

HANDBOOK OF ORTHOPAEDIC SURGERY. By Alfred Rives Shands, Jr., B.A., M.D. Illustrated. The C. V. Mosby Company, St. Louis, 1937. Cloth.

* * *

LOCAL ANESTHESIA. The Technic of. By Arthur E. Hertzler, A.M., M.D., Ph.D., LL.D., F.A.C.A. Sixth Edition. Illustrated. The C. V. Mosby Company, St. Louis, 1937. Cloth.

* * *

OBSTETRIC AND GYNECOLOGIC NURSING. By Frederick H. Falls, M.S., M.D., F.A.C.S., and Jane R. McLaughlin, B.A., R.N. Illustrated. The C. V. Mosby Company, St. Louis.

REVIEWED

WHY WE DO IT. By Edward C. Mason, M.D., Ph.D., F.A.C.P., Professor of Physiology, University of Oklahoma School of Medicine, Oklahoma City. Cloth, 177 pages. The C. V. Mosby Company, St. Louis, 1937.

This book, by an Oklahoma author, will prove interesting and instructive to those directing the early childhood of our developing citizenship. There are many suggestions relative to conduct and behavior that if carried out to the point of precision will be very valuable and while it is probably a little complicated to the ordinary parent, it will be very helpful to the instructor and disciplinarian.

* * *

MATERIA MEDICA TOXICOLOGY AND PHARMACOGNOSY. By William Mansfield, A.M., Ph.D., Dean and Professor of Materia Medica and Toxicology, Union University, Albany College of Pharmacy, Albany, N. Y. With 202 Illustrations. The C. V. Mosby Company, St. Louis, 1937.

This is a most complete volume of its kind. It is divided into twenty-seven chapters. In the first twenty chapters the drugs of plant origin; the chapters are divided as Roots, Rhizomes, Barks, Leaves, Stems, Flowers, et cetera. Under each chapter a general discussion of this group is given and then each drug derived from this portion of plants is listed and the following information is given: The English name, synonyms, botanical origin, part used, impurities, assay, ash, habitat, description constituents, dose, preparations, properties and uses. The description of each plant with its derivatives is contained on one page.

The next seven chapters are given to discussion of drugs of animal origin, poisons, corrosive poisons, irritant poisons, irritant vegetable and animal drugs, systemic poisons, and posology. These drugs are all described individually as is outlined above.

There are 202 illustrations which give valuable photographic information on the various drugs or groups of drugs. The posology lists the dosage of the drugs as liquid or solid under two tables. One for study of the dosages and one for reference. The latter being arranged alphabetically. There is also a glossary of medical and botanic terms.

This volume gives its information in brief and well arranged order and should be very useful as a reference book.

* * *

SYNOPSIS OF GYNECOLOGY. By Harry Sturges Crossen, M.D., F.A.C.S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital, and St. Luke's Hospital; Consulting Gynecologist to De Paul Hospital and the Jewish Hospital; Fellow of the American Gynecological Society and of the Central Association of Obstetricians and Gynecologists; and Robert James Crossen, M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital; Gynecologist to St. Luke's Hospital and to De Paul Hospital; Fellow of the Central Association of Obstetricians and Gynecologists. Second Edition. Illustrated. The C. V. Mosby Company, St. Louis, 1937. Cloth, \$3.00.

This compend on Gynecology seems to meet the purpose for which it was written, that of furnishing information to that group of medical students who, along with their many other studies, must have a working knowledge of this subject. The essential gynecological problems are touched upon in such a way that it gives the student comprehension as to detailed knowledge of the subject. It might also be used by the general practitioner as reference.

—o—

American Board of Obstetrics and Gynecology Examinations Announced

The next written examination and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology will be held in various cities in the United States and Canada on Saturday, November 6, 1937.

The next general examinations for all candidates (Groups A and B) will be held in San Francisco, Calif., on June 13 and 14, 1938, immediately prior to the American Medical Association meeting.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania. Applications for these examinations must be filed in the secretary's office not later than sixty days prior to the scheduled dates of examination.

—o—

Diabetes Mellitus: Report of Case Resistant to Insulin but Responsive to Change in Type of Carbohydrate Fed

In their case of glycosuria resistance to insulin Howard H. Mason and Grace E. Sly, New York (Journal A. M. A., June 12, 1937), could almost stop the glycosuria by the substitution of levulose or galactose for dextrose in the diet. There is evidence to show that the patient was able to burn dextrose freely without the help of injected insulin. They suggest that the difficulty is due to a marked lessening of the liver's ability to convert dextrose to glycogen or an intermediary product in this conversion. If their interpretation of the physiologic disturbance manifested by this patient is correct, it is rendered likely that in normal human subjects the precursors of dextrose are all changed to glycogen or at least undergo some preliminary step of this conversion before they can become dextrose. A further interpretation of the evidence presented is that one of the modes of action of insulin is a retardation of the conversion of glycogen or the intermediate substance to dextrose.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.
404 Medical Arts Building, Oklahoma City

A Modified Sieve Graft. A Full Thickness Graft for Covering Large Defects. Lester R. Bragstedt, M.D., Ph.D., and Harwell Wilson, M.D., Chicago, Ill. S. G. & O., July, 1937.

The author describes the Beverly Douglas method for transplanting relatively large full thickness skin grafts which was first devised and used in 1928. is description covers the method of securing the graft and the method for making multiple perforations for drainage.

The article is accompanied by diagrams and photographs illustrating the technique and results.

COMMENT: This type of graft is useful in covering a large surface especially about the axilla or near a joint. In my own work I have used principally the split graft for such large defects.

I think this technique should be kept in mind as it certainly can be used in some cases to a great advantage.

Correction of Depressed Deformities of the External Nose with Rib Graft. Lee Cohen, M.D., F. A. C. S., Baltimore, Md. Southern Medical Journal, July, 1937.

The author points out that the correction of the depressed deformities of the external nose presents many intricate and interesting problems. He points out that the dorsum of the nose should be corrected to a straight dorsal plane. Alterations in shape and thickness of graft, to make it conform with the dorsum of the nose must be made from the under surface of the graft. He notes how easy it is to obtain an unduly wide dorsum.

He states that the graft should always be narrower at the upper bony end than at the lower end. Generally speaking, the upper end of the graft should measure from one-eighth to three-sixteenths in width, while its lower cartilage end should not exceed from three-sixteenths to one-fourth inch in width.

The author points out that the autogenous graft is the one used by most surgeons doing plastic operations about the nose.

Some men still use cartilage only while some use a combined bone and cartilagenous graft.

The author after twenty-five years experience never uses any graft except the bone and cartilagenous graft. He outlines his pre-operative preparation, also the manner of preventing blood from reaching the pharynx and trachea by post-nasal pack. Bilateral intra-nasal incisions are preferred.

When bone is used it is essential to denude the periosteum from the bony dorsum so as to allow union between the bony graft and the bony nasal attachment. Aluminum splint is used to hold the graft in place. As a rule a wax impression is made

before the operation and a metal model is prepared which is sterilized and used at the time of operation.

Many fine points in technique are described in detail.

COMMENT: This is a very fine description of some technical points in rhinoplasty.

The author shows photographs and drawings of results obtained by his method. He is to be congratulated on the quality of his work.

Personally I have used only the cartilage graft and not the bone and cartilage. However if one desires union between the nasal bone and the graft he must use bone.

Repair of Facial Defects with Special Reference to the Source of Skin Grafts. Jacques W. Maliniak, M.D., New York. Archives of Surgery, May, 1937.

The author points out that the repair of a defect on an exposed part of the body such as the face or neck, presents certain special problems. No matter where the raw surface occurs, it should be covered promptly in order to expedite healing, restore comfort and re-establish proper function. Also, if it is on an exposed area, one must take into consideration the appearance.

He states that it is not the purpose of the paper to describe the technic of different types of flaps and grafts, but to consider their respective suitability for repair of such defects. Each case must be considered an individual problem, and it is not always easy to decide on the method for each case. The attainable cosmetic result is a decisive factor in the selection of procedure—subject to the size, location and etiology of the deformity, vitality of surrounding structures, age, sex of patient and the simplicity of methods under consideration. Cosmetic element for example would loom larger in a young woman than in an old man. The tissues must resemble surrounding structures as nearly as possible and must be such as to retain their characteristics in the distant future. The sliding or rotating graft is the ideal procedure in every case but skin may not be available because of size or location of defect. Since it is difficult to harmonize skin from remote parts of the body with that of the face, the author advocates a pedicle flap from neck or face in spite of scarring slightly.

Whenever possible, the dimensions of the flap from the forehead are reduced to a minimum by serial excision of the deformity. If the flap is kept small enough, the resultant defect can be closed without secondary grafting, owing to the elasticity of the skin of the scalp and forehead.

From the viewpoint of color, if for some reason a flap from the forehead is not available, the second choice for use on the face is skin from the back of the ear (retro-auricular skin). It is preferable to that of the middle and lower portions of the neck, as according to the author's experience, the latter presents a strong contrast even after a period of years. In men, skin from the hair-bearing upper portions of the neck is useful for the reconstruction of hairy facial areas.

Accessibility is a strong argument in favor of the neck as a source of skin for facial reconstruction. A flap can usually be tubed with the secondary defect suture line concealed in the natural folds of the neck. It is particularly valuable for the replacement of losses in the lower half of the facial skeleton.

The author describes and shows by drawings and photographs various types of operative procedure showing replacement of skin losses in all parts of the facial anatomy. These are very interesting and instructive.

Other sources of skin flaps for the repair of large facial defects are the abdomen, back and chest. Also in women with hypertrophied pendulous breasts, the posterior mammary surface is another excellent source of supply, although it may be lighter in color than the facial skin.

The author prefers, in comparing the merits of various types of free skin-grafts, in general the thin graft (epidermal and dermo-epidermal) for covering of a large body surface and the full thickness graft on the face, forehead, eye lids and cheeks; and on areas requiring pressure as palms of hands and elbows.

For a nasal defect he states that skin from the forehead is superior to any other in texture and color, that it should be used in spite of added scar. Some nasal defects can be repaired by rotating the entire thickness of the nasal wall—skin cartilages and mucous membrane. This procedure when done in stages often obviates the necessity for grafting. Illustrations are shown.

Autogenous cartilage is always the substance of choice for repair of the nose and resistant parts of the facial skeleton such as the forehead, chin and zygoma.

The author prefers a large pedicle graft to cover a large defect in the neck because of its cosmetic superiority and the great mobility of the region to be repaired. The most desirable source of skin in the author's experience is a pedicle flap from the side of the chest or abdomen.

The full thickness graft or split graft is the choice for repair of a defect of the hand. A pedicle flap is too thick for the phalanges and small joints of the hand.

CONCLUSIONS

The author concludes with these statements: that rapid covering of raw surfaces is necessary to expedite healing, restore comfort, and re-establish function. On exposed parts of the body the covering supplied must harmonize in color and texture with the surrounding area, even if an additional or more difficult surgical procedure is required. The sliding or rotating flap is the ideal procedure, but it can be used only for some defects of the face. When sufficient skin is not available, the flap from the forehead becomes the method of choice, in spite of the added scar. For a defect on the cheek, the combined use of serial excision and a flap from the forehead minimizes secondary scarring and secondary grafting on the forehead. The flap from the forehead is particularly recommended for the restoration of nasal losses.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
717 North Robinson Street, Oklahoma City

Old Ununited Clavicular Fractures in the Adult.
E. J. Berkheiser. Surg. Gyn. & Obst., June, 1937,
Vol. 64.

The author is impressed by the frequency of

non-union in clavicular fractures in adults and the very modest literature on the subject. He reports nine cases having been seen in a comparatively short time; six with brachial plexus involved and seven which had to be treated by open surgery.

The clavicle is the only bony connection between the arm and trunk and acts as a key bone to hold the upper limb away from the body. The brachial plexus passes immediately beneath the clavicle and the components of the ulnar nerve cross the first rib directly under its middle third. In fractures of the clavicle with the inner end of the outer fragment depressed, there is likely to be injury by pressure or irritation to the brachial plexus.

Non-union of fractures of the clavicle occur far more commonly than was previously considered. The usual cause seems to be exceptionally severe trauma; some of which had received open operation. The location is usually at the common site of fracture; junction of the middle and outer thirds. At operation the ends were found to be enveloped in a thick, firm, fibrous sheath which formed a capsule containing a few centimeters of thin, yellow fluid. Commonly bony spurs were found at the inferior and posterior borders of the fragments.

Symptoms consist of pain along the course of the ulnar nerve, weakness of the intrinsic muscles of the hand and a clicking sensation at the site of fracture. The findings include characteristic deformity of angulation and the characteristic attitude of the shoulder dropped downward, forward and inward. Paresthesia and anesthesia of the ulnar nerve were common. Vascular disturbance occurred in one case.

The treatment in these cases consists of open operation with bone grafting. Autogenous osteo-periosteal tibial grafts have been used. The graft is applied laterally as an onlay graft at a point where the fractured ends are closely approximated. In case of considerable defect in the clavicle, a combined inlay-onlay graft is advised. Fixation is maintained for approximately twelve weeks in plaster spica with shoulder held upward and backward. Ten cases were described with x-rays shown and the treatment discussed.

Operative Treatment of Coccygodynia. J. Albert
Key. Journal Bone and Joint Surgery, Vol. XIX,
No. 3, July, 1937.

Coccygodynia, or painful coccyx, is a condition that occurs predominately in women, but may occur in men. Usually it results from a definite injury, as from a fall or blow over the sacrococcygeal area. Rarely it may appear gradually without a definite cause. Two groups of opinions exist regarding the cause and treatment of this condition. The first is composed chiefly of psychologists and neurologists who consider it a functional neurosis. The second group consists largely of surgeons who feel it is on a traumatic basis and that treatment of the coccyx should be instituted. Symptoms are pain on sitting, more marked in a soft chair usually, and again more severe after sitting sometime; pain on getting up from a chair or sitting down in a chair; pain on defecation, or stooping, lying on the back, and on walking. The pain is localized in the midline at the tip of the spine. Occasionally pain is referred to the right or left buttocks and may simulate sacro-iliac pain. Examination reveals acute pain on direct pressure over the coccyx; pain on rectal examination over the coccyx or on manipulation of the coccyx. X-ray reveals a variety of forms, but as there is no definitely accepted position or shape of the coccyx it is of little value. There is very little to differentiate except possibly

hemorrhoids, which generally offer no confusion as most cases are very typical.

The pathology of the condition is unknown.

TREATMENT: In acute cases with history of recent injury it is advisable if a displacement seems apparent, to attempt reduction with local or general anesthetic. Sedatives may be given and hot Sitz baths frequently, to relieve pain. An air cushion ring is advisable for relief. Strapping of the back may or may not give relief; the same is true of a girdle. With very severe pain bed rest is advisable. Coccygodynia is considered chronic after two months of pain. The author advises that the previously described treatment be attempted and if it fails, advises operation. Other treatment listed consists of psycho-therapy, alcohol injections, deep x-ray therapy and other injections of novocaine, quinine, urea hydrochloride, etc. The operation is technically fairly difficult. A midline vertical incision is used, centered over the sacrococcygeal articulation. The sacrococcygeal joint is divided and it is found that a coccyx usually points directly forward. It is removed by sharp dissection, keeping the knife close to the bone; due respect being given to the rectum. When the tip of the coccyx is reached the strong fibers attached to it are cut transversely. The distal prominent end of the sacrum may be smoothed down if necessary after removal of the coccyx. The posterior pelvic floor is repaired by deep mattress sutures of chromic catgut. The subcutaneous tissues are closed snugly with plain catgut and the skin with silk. The author does not seal the dressing with collodion or strap the buttocks. Patients are usually allowed up in about one week, and activity is encouraged as the wound heals.

Fifteen patients have been operated on by the author in the past six years. Fourteen cases have been followed and all but two have been completely relieved of the coccygeal symptoms. Two patients since have borne children with no difficulty.

The author concludes that while most cases of acute, mild coccygodynia respond to conservative treatment, in severe cases excision of the coccyx followed by restoration of the pelvic floor may be necessary to relieve the symptoms and cause of the disability.

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EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Glaucoma and Sympathetic Ophthalmia. Bernard Samuels, New York. *Archives of Ophthalmology*, June, 1937.

Thirteen cases are reported by Samuels. E. Fuchs is quoted: That in all his surgical experience there were only two instances of the extraction of cataract from an eye with sympathetic ophthalmia in which he succeeded in getting a permanently good result.

Glaucoma may become a factor in both the exciting eye and the sympathizing eye in cases of sympathetic ophthalmia. Mydriatics are indicated to break the adhesions at the pupillary border. If the tension continues to rise then a mydriatic is contraindicated while the use of pilocarpine possibly produces more pupillary adhesions. This makes a delicate situation.

Any operative procedure on the iris or in the region of the ciliary body is strictly contraindicated in such a situation.

Iris bombe is a complication of glaucoma in the sympathizing eye. It is due generally to an excessive proliferation of the specific granulation tissue that replaces the stroma of the iris, causing its anterior limiting layer to approach the cornea.

A point of importance is that when increased tension occurs with sympathetic ophthalmia, secondary glaucoma is not liable to injure the nerve fibres as is primary glaucoma.

Samuels' surgical procedure for the reduction of tension in the sympathizing eye is a paracentesis one mm. from the engorged blood vessels of the limbus in the cornea. Care should be taken to have the incision large enough as it must be re-opened for three or four days. The paracentesis is not always successful. Anterior sclerotomy is spoken of but not recommended.

There are four types of eyes mentioned in which sympathetic ophthalmia develop, viz.:

1. Eyes with decreased tension.
2. Eyes with normal tension.
3. Eyes with primary glaucoma.
4. Eyes with secondary glaucoma.

Each group is discussed.

Six eyes with primary glaucoma which after operation for high tension, excited sympathetic ophthalmia are reported. In five of these sympathetic ophthalmia developed at a time when the eye had become soft. Typical specific infiltration was present in each of these eyes.

Seven eyes with secondary glaucoma which after injury or operation excited sympathetic ophthalmia are reported. In six of these there was very little specific infiltration in the uvea and in the other there was none.

Duration of the sympathetic ophthalmia and time of onset of the glaucoma are discussed.

In the closing comment there is a discussion of Samuels' impression that in glaucomatous eyes relatively little of the specific infiltration of sympathetic ophthalmia develops. This is an original manuscript.

Some Observations on the Management of Infections of the Blood Stream from Mastoiditis. Ralph A. Fenton, M.D., Portland, Oregon. *Archives of Otolaryngology*, June, 1937.

Two cases are reported with recovery. One, a boy, age ten, with a very acute right ear, W. B. C. 16,000, temperature 103.6 degrees with chilly sensations after right ear myringotomy. X-ray confirmed a right mastoid. Operation showed long chain hemolytic streptococcus; sinus plate not broken down. The septic temperature continued after operation. Blood culture showed long chain hemolytic streptococcus. The sinus when opened showed no signs of obstruction in either direction. The right jugular vein appeared normal but was tied. Six small (160 to 180 cc.) blood transfusions were given during a slow recovery. Another, a boy age eleven, who had been sick three weeks with discharging ears, W. B. C. 6,100 with seventy-eight polymorphonuclears, temperature 99.2 degrees. X-ray showed both mastoids cloudy. The left optic disc showed some choke. Blood culture showed long chain hemolytic streptococci. Queckenstedt test indicated sinus occlusion on the left. A left mastoid was done and the jugular vein tied. No clots were demonstrable. One hundred fifty cc. of blood was given before operation. Four blood transfusions of one hundred cc. were given at three day intervals. Recovery was prompt.

Jugular vein ligation in the presence of a posi-

tive blood culture is sometimes criticized as useless since the septicemia has already occurred. The author, however, favors this procedure.

Sulfanilamide medication is discussed. Fenton says: "The sulfanilamides seem to augment the phagocytic activity of the leukocytes rather than to destroy germs free in the blood stream * * *"

Fenton has blood typing routinely done on mastoid cases with possible sinus involvement in order to facilitate blood transfusions should they become necessary.

When the sinuses are packed with selvedged iodoform gauze, these rolls are left in place for five to seven days.

Swift, shockless and complete operation is of importance in septicemia from mastoid and sinus involvement.

Failure to get a positive blood culture may be due to the fact that enough blood was not taken or that it was taken at the period of remission of the temperature instead of when the temperature was being elevated.

Postauricular Fistula. Rea E. Asley, M.D., San Francisco *Annals of Otology, Rhinology and Laryngology*, June, 1937.

This article has to do with closure of postauricular fistula following a simple mastoid, although it is applicable also to the persistent fistula following a radical mastoid operation.

It was considered essential during the early years of mastoid operations to leave a permanent postauricular opening. Epidermization of the cavity took place from behind the ear.

Fistulae, according to Ashley, are of three types. The first corresponds to the situation of the antrum and goes upward and forward toward the posterior root of the zygoma. The second is just an opening filled with pouting granulations. The third is a large crater where the mastoid cells were partially removed, the sides of which are covered with tightly adherent epidermis, with a raw unepithelialized area at the apex of the crater.

Five predisposing factors are given:

1. The general, personal and family clinical history of the patient; the presence of tuberculosis, lues, diabetes, scarlet fever, and many of the blood dyscrasias, favor the formation of fistulae.
2. Very pneumatic mastoids where large cavities result from the extensive removal of cortex and mastoid cells. In many such mastoids the cells extend into inaccessible regions where removal is impractical or impossible. These usually follow one of three courses: some go on to uneventful recovery, others require subsequent surgical revision, and the remainder develop fistulae.
3. Haphazard closing of wound, such as the use of skin clips without careful approximation of the deeper tissues, is a frequent etiologic factor.
4. Errors in after treatment are most important. Packing over too long a period of time with its consequent destruction of healthy granulations; or, conversely, allowing the skin wound to close before healthy granulations have at least partially filled the cavity.
5. The unavoidable increase of non-resistant scar tissue resulting from multiple operations, due to re-infections of the mastoid cavity, is frequently a contributing factor.

The methods of Popper, McNichols, Dixon, Mose-tig-Moorhof, Heine, Trautman, Beck, Goldstein,

Kerrison, Watson, Straatsma, Frey and Eagleton are discussed.

Ashley prefers the "tongue-flap" operation. The scar and fistulous tract are cut out leaving healthy epithelium bordering each side. An inch behind the posterior margin of the wound another incision is made paralleling it. Tissue between the two incisions is dissected free which makes a flap. This flap is divided into two layers the lower layer being the thicker. The lower flap is cut free at its lower border. This is tucked into the mastoid cavity after it has been freshened with a curette. The upper, or skin flap, is moved over and sutured to the undermined anterior skin margin of the cavity. Another parallel incision is made behind the plastic incision and this is used to cover the denuded skull. Mattress sutures of dermal or catgut are used.

Persons susceptible to formation of keloid scars and a continuous discharge of pus from the fistula, contraindicate this operation

Uveitis: The Role of Intraocular Typhoid-Antibody Content in Treatment. Albert L. Brown, Cincinnati. *American Journal of Ophthalmology*, June, 1937.

Systemic infection, organisms or their products in the circulation is the modern idea of the cause of uveitis. The nonspecific treatment is based on this conception.

If syphilis or tuberculosis are not causing the inflammatory process, next to consider is the foci of infection, in order: teeth, tonsils, nasal sinuses, genito-urinary tract and the gastro-enteric tract. Tuberculosis has been blamed many times for a uveitis which later clears after removal of a focus of infection. The diagnosis and therapeutics of tubercular uveitis varies greatly with different ophthalmologists.

The cause of nonspecific uveal inflammation is discussed and some of the experiments that have been done on this. Local activity within the eye of some nonspecific protein seems to limit activity of the inflammation.

The therapeutic benefit of parenteral administration of one of several proteins is probably due to the varying degrees of shock, rise in temperature and leucocytosis. The author thinks the reactions manifest the formation of antibodies which "increase body defense." Typhoid vaccine is preferred because it is commonly used, easy to administer and produces measurable, stable, and recoverable antibodies in the blood.

Paracentesis of the anterior chamber and subconjunctival placement of catgut soaked in typhoid vaccine are mentioned. Local instillations and subconjunctival injections of the vaccine were found to be ineffective. Prolonged subconjunctival injections were accompanied by bulbar irritation and followed by sloughing.

In the choice of protein used, milk, diphtheria antitoxin and typhoid vaccine were studied. Typhoid vaccine seems to answer the requirements better than any other foreign protein. Stable blood antibodies have been recovered one hundred fifty days after one intravenous injection of the vaccine.

The average dose is twenty to twenty-five million every thirty-six to forty-eight hours depending on the result obtained. A dose of fifteen million can be continued at forty-eight hour intervals. Typhoid "H" antigen is used.

In three cases reported he gives three doses of twenty million each intravenously at thirty-six hour intervals. He gives five case reports in detail

and a short summary of forty patients treated in the last three years.

Aspiration of the anterior chamber is favored by the author. He says: "Apparently the procedure is more effective in influencing favorably an acute process . . . no patient was harmed by aspiration, so there does not appear to be any contraindication in uveal-tract inflammation, except possibly the presence of local superficial infection."

A Case of Retropharyngeal Abscess Containing a Pure Growth of Bacillus Paratyphosus. A. R. Dingley, London. The Journal of Laryngology and Otology, April, 1937.

Typhoid spine occurs in about 0.5 per cent of the enteric group of fevers. This was a case associated with the cervical spine and requiring an urgent laryngotomy. Suppuration is quite common as is also the occurrence in the cervical spine. It usually occurs without suppuration in the lumbar area and in males between the ages of twenty and thirty-five. This man was age seventy. After recovery from operation an x-ray showed a pharyngeal diverticulum near the bony lesion; it may or may not have had any connection with the pathology found. It might have been a contributing factor to the infection or it might have been the result of the infection.

When this patient was admitted to the hospital he had an increasing dyspnoea and dysphagia for the past six weeks. Three days before entrance he had become markedly worse.

A year previously he had been sick with a fever for three weeks, which was accompanied by a stiff neck (probably undiagnosed paratyphoid fever).

Dyspnoea, dysphagia, cyanosis, difficulty in speaking and stridor were present when admitted. Both sides of the neck were swollen; the larynx and trachea were forward; swelling was diffuse, painless and soft; there was no fluctuation.

It was obvious a laryngotomy or a tracheotomy would have to be done. Malignancy was mentioned. Anterior-posterior and lateral x-rays showed a bony lesion of the fifth, sixth and seventh vertebrae. A pyogenic osteo-periostitis with probable abscess formation was suggested.

After a laryngotomy was done the swelling in the neck was explored. There was a large, tense, diffuse, thick-walled swelling, passing from one side of the neck to the other behind the pharynx, larynx and trachea, pushing these as well as the thyroid gland forward. The structures named had the appearance of being strapped over the front and sides of the swelling. Aspiration showed thick yellow pus which cultured pure bacillus paratyphosus B. There was a faintly positive widal.

After removal of the pus, a drainage tube was left in situ. Recovery was rapid. The laryngotomy tube was removed the day following operation. The tube was removed from the abscess cavity the fifth day. X-rays accompany the case report.

Optic Neuro-Retinitis From Intestinal Toxemia. Harry Vandervilt Wurdemann, M.D., Sc.D., F.A.C.S., Seattle, Washington. The Eye, Ear, Nose and Throat Monthly, June, 1937.

The diagnosis of this disease is comparatively easy; the determination of the etiological factor many times is very difficult and arrived at only by exclusion.

Some etiological factors mentioned are: syphilis, trauma, certain acute diseases—especially those of the cardiovascular renal type, meningitis and tumors of the brain, poisons from alcohol, tobacco, drugs, and very occasionally, infections involving

the nasal sinuses and toxemias originating in the intestinal tract.

Three cases are reported with a positive diagnosis of intestinal toxemia as the cause of loss of vision.

Pilocarpine sweats, iodides, high frequency treatments, high rectal daily injections, alkalinization and regulation of diet were included in the treatment.

All three cases improved, one remarkably so considering the appearance of the optic nerves.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
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Hemorrhage into Hydatid of Morgagni Simulating Acute Appendicitis. By F. B. Zener, M.D., St. Vincent's Hospital, Portland, Oregon. The American Journal of Surgery, July, 1937.

The author reports the cases of two patients. The first was a girl of thirteen. She was awakened at one a. m. by generalized abdominal discomfort which gradually localized in the right lower abdomen. There was some nausea and vomiting. Physical examination revealed definite tenderness and rigidity over McBurney's point. The white blood count was 14,000 with seventy-eight per cent neutrophils. The diagnosis was acute appendicitis.

An operation was done, the abdomen being entered through a right rectus incision. There was a small amount of serosanguinous fluid in the peritoneal cavity. The appendix did not show any pronounced pathology, but was removed. A search was then made for possible pathology in the pelvis. The right ovary was found to be cystic and enlarged to about 4.5 cm. by 3.5 cm. "Attached to the right salpinx is a small mass which has the appearance of an organized blood clot. A microscopic section of the mass reveals patches of erythrocytes among which a few strands of smooth muscle, connective tissue, and in places supporting blood vessels are noted. Parovarium structures are also present in this. These are characterized here by a narrow strip of smooth muscle covered over on the inner surface by a single layer of columnar epithelial cells. One of these structures is dilated and forms a cyst in which there is flattening of the lining epithelium. The absence of blood pigment signifies that the haemorrhage is of very recent origin."

It was the conclusion of the author that this hemorrhagic mass represented a hydatid of Morgagni, and the pathological diagnosis was hemorrhage into the tissue of the broad ligament about it, the hemorrhage probably being due to torsion.

The second case was that of a female thirty-four years of age who complained of palpitation and tachycardia. There were occasional aching pains in the left lower abdomen. There was a small tender mass in the left adnexal region and tenderness on palpation over the left lower abdomen.

About three weeks after these observations were made there was complaint of severe left sided, cramp-like pain and backache. It was about time for an expected menstrual period. An examination per vagina revealed that the cystic mass before noted had increased in size, and was tender. There was a tentative diagnosis of torsion of the pedicle of a left cystic ovary, or an endometriosis of left adnexae.

An operation was done. The uterus was in retroversion. There was a hydatid of Morgagni on

the left side. It presented a long pedicle which was twisted. The uterus was suspended and the hydatid removed. Six months after the operation the patient was free from symptoms.

It appears that hemorrhage into a hydatid of Morgagni is quite uncommon, and judging from the investigations of the author a correct pre-operative diagnosis is rarely made. By far the most common error is to make a diagnosis of acute appendicitis. Other incorrect diagnoses have been abnormal pregnancy and ovarian cyst with torsion of the pedicle.

Finally, the author emphasizes the wisdom of making an exploration of the pelvis in the case of all patients where some other pathology, like acute appendicitis, does not explain the symptoms and clinical course.

COMMENTS

In the so-called "acute abdomen" the careful surgeon thinks of intra-peritoneal bleeding as one of the explanations. While hemorrhage into a hydatid of Morgagni may be very uncommon, it is well known that there may be hemorrhage due to rupture of other cysts in the ovarian region. As a rule, the contact of the blood with the peritoneum brings about very sharp reaction, characterized by severe pain in the lower abdomen, probably more diffuse than in the average acute appendicitis at first; by leukocytosis, and a little later fever.

The advice of the author to explore the pelvis in any doubtful situation is definitely sound.

Wendell Long.

Cullen's Sign in Acute Pancreatitis. By Lawrence S. Fallis, M.D., Detroit, Michigan. *Annals of Surgery*, July, 1937, Page 54.

In 1919 T. S. Cullen described the occurrence of discoloration of the skin around the umbilicus in connection with ruptured ectopic gestation. It appears that Hofstatter had referred to the sign in 1909, but apparently Cullen was the first to recognize the importance of it.

In 1920 G. G. Turner published an article on "Local Discoloration of the Abdominal Wall as a Sign of Acute Pancreatitis" in the *British Journal of Surgery*, and in England the sign is known as the Grey-Turner sign.

The author reports the cases of three patients in which the sign was present in connection with pancreatitis. The following are briefs of the cases:

CASE I. Woman of sixty-eight. Severe abdominal pain two days. Vomiting. Maximum pain right upper abdomen, with radiation to right scapula. Had had similar but less severe attacks for two years.

Temperature 101. W. B. C. 14,000; polys 86. First diagnosis acute cholecystitis. The next day, that is, three days after onset, discoloration in and around umbilicus. Diagnosis changed to acute pancreatitis.

Operation under spinal anesthesia. Large amount blood-stained fluid in peritoneal cavity. Numerous areas of fat necrosis. Drainage lesser peritoneal cavity. Death ensued six hours later.

CASE II. Woman of sixty-four. Chief complaint abdominal pain for six days, following vomiting. Pain in epigastric region. No history of jaundice.

Appeared to be acutely ill. Temperature 96. Pulse 112. W. B. C. 14,300; polys. 90. Blood sugar 154 mg. Slight icterus. Slight tenderness on pressure over gall bladder. Moderately tender in epigastrium, and very tender over left upper quadrant. In that region there was a hard irregular mass extending

from the rib margin downward to the crest of the ilium. Diverticulitis with abscess was considered to be the most probable diagnosis. Cullen's sign not discovered until patient on operating table under strong light, when it was noticed that there was discoloration, yellowish, around the umbilicus. There was a last minute pre-operative diagnosis of acute pancreatitis. There was no blood-stained fluid found in the peritoneal cavity. Fat necrosis omentum in left upper quadrant. Lesser peritoneal cavity explored through gastrocolic omentum. Tail of pancreas engorged. No free fluid or pus. Cigarette drain into lesser sac. Patient recovered.

CASE III. A male forty-eight years of age. Chief complaint mass in the abdomen. Nine days before that there had been sudden, severe attack of nausea and vomiting followed by profuse perspiration and the sensation of profound weakness. No abdominal pain. A little later there was sudden severe prostrating pain in the left upper abdomen.

Temperature 100.2. Pulse 70. Abdomen not distended. No muscle spasm. There was a yellowish tint of the skin about the umbilicus for a distance of one inch, and a diagnosis of acute pancreatitis was made.

At operation there was no free fluid and no evidence of fat necrosis in the peritoneal cavity. "The mass consisted of hemorrhage and oedema in the left half of the transverse mesocolon." Lesser peritoneal cavity entered through gastrocolic omentum. It contained a little blood-stained fluid. The body of pancreas toward left was oedematous and the tail of the pancreas was greatly indurated. Cigarette drain. Recovery.

In ruptured ectopic gestation the discoloration about the umbilicus is presumably due to the blood shining through the structures about the umbilicus, the blood being inside the peritoneal cavity. The author mentions another condition in which there is discoloration of the subcutaneous tissues around the umbilicus, the discoloration suggesting extravasation of blood because of the color changes—at first bluish-black, then fading to a greenish color and finally yellowish before disappearing. Reference is made to one of Grey-Turner's cases as having this type of discoloration.

The pancreas being an extra peritoneal organ, another explanation for discoloration about the umbilicus must be sought. The author believes that it is probably due to the tracking around of the blood in the sub-peritoneal space between the peritoneum and transversalis fascia, reaching the mid-line anteriorly.

It appears that the sign is not found very often, but when it is present it might be of considerable value.

LeRoy Long.

Infections of the Dangerous Areas of the Face. Their Pathology and Treatment. By Urban Maes, M.D., New Orleans, La. *Annals of Surgery*, July, 1937.

Credit is given to H. Ludlow for the first practical article on infections of the "dangerous area" of the face. His article was published in 1852. In it he described six cases, three of them fatal.

In 1883 Sir Frederick Treves described the anatomy of the facial vein and its communications, and showed how infections about the upper lip and immediately adjacent areas might produce a thrombo-phlebitis of the radicles of the facial vein which has no valve, and thence the infection might be carried by way of the ophthalmic vein

to the inside of the skull, producing an infectious cavernous sinus thrombosis.

In 1922 Walton Martin published an important article entitled "The Fatal Outcome of Certain Cases of Staphylococcus Infections of the Face and Lips" in the *Annals of Surgery*. Apparently he was moved to publish the article because of the tragic experience of having witnessed seven deaths in ten cases while he was a medical student.

Maes describes the "dangerous area" of the face as a triangle which extends roughly from the angles of the mouth to the bridge of the nose. The danger is based upon anatomic and physiologic reasons, the most important of which is that thrombophlebitis of the small veins in that locality is too often followed by an extension by way of the facial vein, thence into the cavernous sinus.

Maes makes the statement that he has never seen a case in which the element of trauma was not present. He indicates that it is not a severe trauma, but trauma due to squeezing, picking and unwise dangerous disturbance of small inflammatory areas about the upper lip and side of the nose. He says, "The average lay person finds it difficult to refrain from meddling with facial blemishes, and the average doctor seems to find it impossible, whether they are on himself or his patients."

It is indicated that the trauma destroys the wall of leukocytes which is the protection about the point of infection.

In the early stages of infectious processes about the face, and especially about the upper lip, the author definitely advises against trauma of every kind. He definitely advises against premature incision. He says, "Lay persons must learn to keep their hands off their faces, and physicians must learn to keep their hands off their patients' faces." Not that, only, but the facial structures must be kept at rest.

Maes makes the following significant statement: "If the lesion has not been tampered with (he is talking about lesions, like pimples and boils) it is rare indeed that the condition does not clear up without further treatment, or, if necessary, incision can be done later, when localization has definitely occurred."

The gist of this article is that inflammatory lesions about the face, including the upper lip and immediate territory, will pursue a benign course if they are strictly let alone.

COMMENTS

This is an extremely important and practical article. For many years it has been the observation of the reviewer that if inflammatory lesions about the face are strictly let alone there will be localization, the lesion frequently rupturing spontaneously after which it is only necessary to keep the area clean by gentle methods and protect it by a sterile dressing. The reviewer agrees in a most ardent way with the advice against premature operative procedures. When one has seen the disasters that follow unwise and reckless meddling with lesions about the face one acquires deeply rooted convictions. If every physician would put into practice the advice of the author many lives would be saved. The same principles are applicable in the early treatment of a boil anywhere, but in connection with the early treatment of a boil on the upper lip, or in the immediate neighborhood of the lip and nose, a departure from the sound principles of conservative management, based upon an intelligent understanding of the anatomy, usually leads to disaster.

LeRoy Long.

Primary Lymphosarcoma of the Ovary. Report of a Case. By H. A. Durfee, M.D., B. F. Clark, M.D., and J. H. Peers, M.D., C. M. University of Vermont, Burlington, Vermont. *The American Journal of Cancer*, July, 1937.

The authors indicate that lymphoblastoma of the ovary, either primary or secondary, is an unusual condition. There is a reference to the report of a case by Walther in 1934, the case being a primary lymphosarcoma of the ovary, and at which time he was able to find but one other report of such a case in the literature. The authors state that less than a dozen instances of metastatic lymphoblastoma have been described. (In this article the term "lymphoblastoma" and the term "lymphosarcoma" are used interchangeably, but, after judging from the title of the article, it is assumed that whether one term or the other is employed it is intended to indicate lymphosarcoma of the ovary.)

Notwithstanding the rarity of the affection, it is indicated that the apparent rarity might be due to confusion in connection with the nomenclature employed by different writers.

There is a case report, the salient features of which are as follows: White female, age twenty-three, mother of three children, entered hospital complaining of rapid enlargement of the abdomen, loss of strength for three months, and of "gas pains" for four days. She was in the sixth month of pregnancy. Two months before admission there was a small, soft, painless mass discovered at the introitus and two weeks later, following a bump, there was a small non-tender mass in the upper outer quadrant of the right breast. About that time she noticed that the gums bled when she brushed the teeth, and she discovered a small pedunculated mass attached to the gum near the left upper canine tooth. She thought that the left side of the abdomen enlarged more rapidly than the other part of the abdomen. Two weeks before admission there were several nodules in the left breast.

Physical examination disclosed two masses in the abdomen. The larger one was on the left side, and extended from pelvis to costal border. It did not move with respiration. The smaller mass on the right side extended to the level of the umbilicus, and in that area fetal heart sounds could be heard.

The vaginal mucosa was studded with many sessile, moderately firm nodules from one cm. to two cm. in diameter. "All were covered with smooth mucous membrane, but the centers of the larger nodules were hemorrhagic." A mass three cm. by two cm. projected through the introitus from the anterior vaginal wall. "The cervix seemed to be continuous with the right abdominal tumor, and the left tumor was believed to arise from the corresponding ovary."

There were multiple, moderately firm, movable masses from one cm. to four cm. in diameter in both breasts. There were small sessile nodules in several locations on the gum margins. There were a few barely palpable lymph nodes in the axillae and along the sterno-cleido-mastoid muscles.

The blood count showed hemoglobin 70, R. B. C. 2,980,000, W. B. C. 5,800, neutrophils 71, lymphocytes 20, large monocytes 7, eosinophiles one, basophiles one. There were no x-ray evidences of metastases, pulmonary or otherwise.

Biopsy of one of the vaginal nodules revealed a "malignant lymphoblastoma."

The patient aborted eleven days after admission to the hospital. "Following delivery the temperature rose moderately and she died the next morning, twelve days after admission and approximately

three and half months after the onset of symptoms."

An autopsy revealed a much distended abdomen which contained about two litres of clear straw-colored fluid. "A large, smooth, oval mass thirty cm. by twenty cm. replaced the left ovary and nearly filled the left side of the abdomen. There were no adhesions. The right ovary was replaced by a smaller mass, twenty cm. by twelve cm., and this was slightly adherent to the right pelvic wall. Both tubes were grossly normal. The uterus extended twelve cm. above the pubis. The cervix was patulous. The uterine cavity was lined with smooth decidua and blood clots. No gross or microscopic tumor deposits were present. The vaginal mucosa was thickly studded with flat, sessile tumor nodules." The principal masses contained hemorrhagic and necrotic areas. The blood vessels in the masses were thin walled, and thrombosis had occurred in many of them. There were flat nodules on the parietal peritoneum, mostly in the pelvis. There were tumor deposits on the mucosa of stomach and small intestines, and occasionally in the mucosa of the large intestine. The liver and spleen were apparently normal. There was tumor infiltration of the pancreas. Both kidneys were enlarged and contained patches of tumor tissue.

"The heart was of normal size, but presented a most remarkable appearance. The epicardium was thickly studded with tumor nodules which became confluent and almost completely sheathed the coronary branches. There were no deposits in the parietal pericardium. Between the auricles posteriorly was a large, solid mass of tumor two cm. in diameter. On opening the heart, the columnae carnae and papillary muscles of both ventricles were found diffusely thickened and pale from extensive tumor infiltration, giving them somewhat the appearance of having been covered with a very thick coat of heavy cream-colored paint. On section the tumor deposits seemed grossly confined to the epicardial and subendocardial surfaces. The ventricular surfaces were smooth and with no evidence of mural thrombosis. The valves were negative throughout.

"Sections of both ovaries were identical in appearance. The masses were composed purely of tumor, with no trace of ovarian tissue. Areas of closely packed, small round cells alternated with looser patches, giving the whole section an irregularly mottled appearance. Fairly numerous thin-walled vessels were scattered throughout the tumor. The stroma was so delicate as to be nearly invisible with ordinary stains, but silver impregnations demonstrated an abundant, regular, close meshed network of argyrophile reticulum fibers. There was no suggestion of lobulation or alveolar arrangement.

"Throughout its various metastases, the tumor maintained an absolute uniformity of cell type and arrangement.

"The bone marrow contained no recognizable tumor cells. It was slightly hyperplastic, the increase in cellularity being due to a considerable number of stem cells in small groups, and a greater than average proportion of myelocytes in various stages of maturation.

"Throughout all sections, vessel walls appeared almost invariably to resist invasion. No recognizable tumor cells were seen in the blood within vessels, and there was nowhere, either in blood studies during life, or in the post-mortem tissue sections, any suggestion of a leukemic state."

In a discussion of the problem, the authors say, "The diagnosis of lymphosarcoma in this case rests primarily on the type of tumor cell, which closely

resembles the medium-size lymphocyte. This cell type was constant in all sections of tumor examined. Strong corroboration was provided by the fine, net-like reticular stroma, which was also constant, and showed no trace of alveolar arrangement. Some further support was furnished by the occurrence in the primary tumor and in the majority of the metastases of numerous Russell's fuchsin bodies.

"The tumor was believed to be primary in the left ovary chiefly because this was by far the largest mass present."

In concluding the article the authors state, "The starting point of an ovarian lymphoblastoma must still remain a theoretical problem. The standard works on normal histology, while occasionally admitting the existence of lymphatic vessels, are unanimous in denying the presence of lymphoid tissue in the normal ovary. Walther, in his case reports, attempted to circumvent this difficulty by supposing that lymphoid tissue might have been present as a result of previous chronic inflammation. We may presume to suggest another theoretical mechanism: viz. that our tumor arose as massive overgrowth of the lymphoid element of a pre-existing teratoma. Proof of this suggestion, however, is not now obtainable, as the ovarian mass was both uniform and very large, and a thorough microscopic search for fragments of teratoma was manifestly impracticable."

Wendell Long.

The Stoneless Gall Bladder. An Analysis of One Hundred Cases Treated by Cholecystectomy. By Carl A. Kunath, M.D., Iowa City. *Journal of the A. M. A.*, July 17, 1937.

This is a report from the University Hospital at Iowa City When one compares the analysis of the non-calculus cholecystitis cases with the analysis of the calculus cholecystitis cases he finds that the stoneless cases show a greater morbidity, a higher post-operative mortality and about half as many cures.

In this series the stoneless cases were carefully analyzed from the standpoint of pathologic changes present in the gallbladder wall and from the standpoint of cholecystographic evidence, but little help is offered from either of these sources in regard to prognosis following cholecystectomy. In general, the end results tended to be better as the pathologic changes became more marked.

An analysis of the pre-operative symptoms was of value in estimating the probable benefit to be obtained from cholecystectomy. They were able to cure colic in about eighty-six per cent of the cases in which it was present before operation. They were able to cure about thirty-three per cent of dyspepsia. However, of the patients who did not complain of dyspepsia prior to operation, thirty-eight now report that they have such symptoms. This seems to support the view that the dyspepsia syndrome is related not so much to disease of the gall bladder as to non-function of the gall bladder.

In the attempt to explain poor results following cholecystectomy in the stoneless cases these Iowa men were able to find certain errors in diagnosis. These included duodenal ulcer, duodenal diverticulum, tuberculosis spondylitis and chronic gonococcal peritonitis. However, the majority of diagnostic errors were associated with cases of irritable intestine and spastic conditions of the gastrointestinal tract. They suspected that a few poor results could possibly be ascribed to residual pathologic changes in the pancreas, liver or bile ducts, but it was not possible for them to definitely prove

that there were any such changes in these organs.

They believe that the great majority of the unimproved cases (of stoneless gall bladders which are operated upon) must be explained on a basis of physiologic change or altered function. There is probably a large group of cases, in every series of stoneless gall bladder, lying on the borderline between organic and functional disease; these are the cases in which diagnosis is difficult and in which cholecystectomy is apt to be disappointing.

The hope for improvement in the treatment of the stoneless gall bladder appears to depend upon a better understanding of the physiology of the biliary tract. It is entirely likely that this improvement will be in the form of more intelligent medical management based on a sound knowledge of the common morbid physiologic changes that occur in the biliary tract. Meanwhile cholecystectomy should be advised in such cases only after exhaustive study has been carried out, and the patient should not be promised too much. He should be warned that he may still have difficulty after the operation in digesting large heavy meals of fatty foods and that dietary measures may be necessary.

LeRoy D. Long.

Acute Appendicitis. A Comparative Survey with Remarks on Its Management. By H. Jackson King, M.D., Binghamton, N. Y. The American Journal of Surgery, July, 1937.

"Certain conclusions may be drawn from this mass of information:

"1. The operative mortality for acute appendicitis at this hospital, under a regime of radical treatment as practiced by a sizeable group of surgeons employing varied techniques, was 4.2 per cent during the year 1934-35. This represents a marked reduction in the mortality of five years previously. While this mortality in no sense is comparable to that reported by certain clinics, better hospitals, and in various individual series, it nevertheless represents a rather respectable effort to cope with a problem of increasing difficulty.

"2. Inadequate hospital records prevented an evaluation of the importance which the factors of time and cathartics may have played in effecting this lowered mortality, but it is certain that better surgical judgment and improved surgery were largely instrumental in producing the marked drop in mortality which occurred in the group of cases complicated by peritonitis.

"3. The mortality in acute uncomplicated appendicitis at this institution is creditable and probably almost irreducible, but the treatment of appendicitis with abscess still shows a mortality which is much too high.

"4. A short experience with bacteriophage as an adjuvant in the treatment of ruptured appendicitis is reported. No apology is made for the brevity of the series since the cases are considered to be representative. However, it is appreciated that only through trial in a reasonably long series of cases can a true estimate of its value be reached.

"It is likely that no one operative procedure will effect a very material drop in mortality among the severe cases of appendicitis. Improved mortality in all probability will result largely from the exercise of better judgment as to when to operate and how much to do. However, three points in operative procedure do stand out as worthy of particular consideration in any plan for reducing operative mortality in appendicitis.

"1. The weight of evidence seems to indicate that in the very small percentage of cases where

a severe spreading peritonitis complicates the picture, a regime of conservative treatment and temporary delay in operation offers the patient the best chance of recovery.

"2. Controlled series seem to show that the use of the McBurney incision or its modifications favors a lowered mortality by confining operative manipulations to a very limited area of the abdomen, thus helping to keep the peritoneal infection localized.

"3. In an admittedly short series of cases, bacteriophage has shown that it is worthy of further investigation in the treatment of cases complicated by peritonitis.

"The experience has been that improvement in the hospital management of acute appendicitis is capable of producing a marked lowering in the mortality rate of this disease. It appears probable, however, that any considerable mortality drop will occur only when the public is thoroughly enlightened regarding the dangers of catharsis and of procrastination in the treatment of abdominal pain, and when routine early hospitalization of these cases will make possible removal of the appendix at a time when the operation carries with it, in experienced hands, a mortality which is almost negligible."

COMMENTS

This is an intelligent survey from an average hospital in this country. It represents, I believe, the conclusions which are reached by the members of any good hospital staff who critically inspect their own records. Their conclusions as to the importance of waiting in the presence of severe spreading peritonitis and of the advantages of the McBurney type of incision are, I believe, particularly to be stressed.

My own experience includes a period of training with men who believed that operation should be done at once when the diagnosis was made regardless of the stage of the disease, and for the past fifteen years with a man who has unalterably held the view that severe spreading peritonitis demanded temporary delay. There can be no question in the mind of one who has had such experience that the conservative type of treatment in the severe spreading peritonitis cases is life saving.

LeRoy D. Long.

Summer Diarrhea in Babies

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the twenty-four hour formula and replaced with eight level tablespoonfuls of casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextrin-Maltose may safely be added to the formula and the casec gradually eliminated. Three to six teaspoonfuls of a thin paste of casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

Benzedrine Sulfate in Certain Depressive States

In an investigation of the stimulation produced by Benzedrine Sulfate (benzyl methyl carbinamine sulfate, S. K. F.), Davidoff and Reifenshtein (Journal A. M. A., 108:1770, May 22, 1937), made detailed comparisons on a group of normals and five groups of abnormal patients. Results were based

on effects produced on mood, speech, motor response and general efficiency, and are shown in the following table:

	No. of Subjects	Elevation of Mood	Increased Talkativeness	Increased Motor Activity	Increased Efficiency
Normals	10	70%	70%	100%	100%
Self-Absorbed or Depressed—Organics	10	50%	70%	80%	80%
Dementia Praecox	25	16%	25%	44%	36%
Manic Depressives	10	20%	60%	60%	60%
Psycho-neurotics	10	30%	60%	40%	30%

A higher percentage of response was observed in normal cases, although in some of the abnormal cases improvement was sufficient to suggest that Benzedrine Sulfate may shorten the recovery time in cases where ultimate recovery may be expected.

In addition to the results listed above, certain undesirable physiologic, central and peripheral effects of the drug were described in considerable detail. These varied widely with individual patients. In some cases untoward results were severe enough to counterbalance beneficial effects. None

of the abnormal cases showed any noteworthy change in the structure of the psychosis.

The authors feel that Benzedrine Sulfate may be of value in several conditions, but that due caution should be exercised in its administration.

Blood Studies: Report of 2,728 Cases

E. W. Pernokis, Chicago (Journal A. M. A., May 15, 1937), summarizes the results obtained from examination of the blood of 2,728 consecutive patients reporting to the blood clinic of the Central Free Dispensary, Rush Medical College, Chicago, from April 1, 1933, to August 1, 1936. A complete blood count was done on every patient reporting to the clinic. Of the total number of patients who reported to the clinic 6.5 per cent showed blood dyscrasias, while the others were sent there by the physician in charge to get aid in making the diagnosis in question. Fifty per cent of the cases with infections and general systemic diseases showed an anemia, while twenty-five per cent of each group showed a leukocytosis. Lymphocytosis was present in twenty per cent of the infections and twenty-five per cent of the systemic diseases. The monocytes were increased in twelve per cent of the infections and five per cent of the systemic diseases, while the eosinophils were increased in 3.4 per cent of the infections and 1.3 per cent of the systemic diseases. There were no cases of agranulocytic angina or acute infectious mononucleosis. In none of the one hundred cases of arthritis in which aminopyrine and phenobarbital had been administered was there a case of leukopenia noted. Averages of the blood counts and differential values in the various groups fail to demonstrate the individual differences seen in separate counts.

Report of Licenses Granted to Practice Medicine

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Permanent or Present Address
McMath, John Thomas	1879	Hillsboro, Ark.	Univ. Arkansas	1905	Idabel, Okla.
Talley, Edward Evans, Jr.	1905	Driftwood, Okla.	Univ. Oklahoma	1934	Enid, Okla.
Reding, Anthony Charles	1909	El Reno, Okla.	Univ. Oklahoma	1935	Ponca City, Okla.
Knight, Claude B.	1911	Wewoka, Okla.	Univ. Oklahoma	1935	Wewoka, Okla.
Ross, Geo. Thompson	1907	Mint, Tenn.	Univ. Oklahoma	1935	Staten Island, N. Y.
Sullivan, Sullins Grenfell	1912	Stonewall, Okla.	Univ. Oklahoma	1935	Baltimore, Md.
McKay, Edward Danson	1911	Oklahoma City, Okla.	Univ. Oklahoma	1935	Oklahoma City, Okla.
Bowser, Elmer Elsworth, (col.)	1886	Have de Grace, Md.	Howard University	1914	Tulsa, Okla.
Carlock, John Hoyle, Jr.	1910	Ardmore, Okla.	Tulane University	1935	Ardmore, Okla.
Gardner, Elsworth Lewis	1910	Hollis, Okla.	Univ. Oklahoma	1935	Eugene, Oregon
Wait, Will Curd	1881	Somerset, Ky.	Hospital College of Med., Louisville, Ky.	1906	Clinton, Okla.
Arrington, Jas. E.	1878	—, Tenn.	Univ. Tenn. Med. Dept.	1905	Frederick, Okla.
Bell, Orville Earl	1905	Snyder, Okla.	Univ. Oklahoma	1936	Norfolk, Va.
Rose, Ernest	1899	Dexter, Texas	Univ. Oklahoma	1936	Sulphur, Okla.
Brady, John Harry	1911	Eric, Pa.	Univ. Oklahoma	1936	Fairview, Okla.
Dakil, Louis N.	1911	Lake Charles, La.	Univ. Oklahoma	1936	Oklahoma City, Okla.
Hamilton, James	1906	Greensburg, Pa.	Univ. Oklahoma	1935	Greensburg, Pa.
Maril, Joseph Jules	1912	Chicago, Ill.	Univ. Oklahoma	1936	Oklahoma City, Okla.
Schreck, Philip Miller	1912	Tulsa, Okla.	Baylor University	1936	Tulsa, Okla.
Rucker, Ralph Weller	1911	Norman, Okla.	Univ. Oklahoma	1936	Oklahoma City, Okla.
Chaffin, Zale	1913	Mr. Vernon, Texas	Univ. Oklahoma	1936	Oklahoma City, Okla.
Rempel, Paul Harvey	1907	Cooperton, Okla.	Univ. Oklahoma	1934	Enid, Okla.
Dougan, Archie F.	1911	—, Okla.	Univ. Oklahoma	1936	Oklahoma City, Okla.
Duncan, Robert Whitworth	1909	Carmen, Okla.	Univ. Oklahoma	1936	Oklahoma City, Okla.
Lewis, E. F.	1865	—, Pa.	Univ. Arkansas	1900	Ada, Okla.
Witten, Harold Bryan	1907	Gotebo, Okla.	Univ. Oklahoma	1936	Hobart, Okla.
Littell, Milton	1909	New York City	Baylor Med. College	1935	Sentinel, Okla.
Hollingsworth, Chas. Edward	1908	Chickasha, Okla.	New York Univ.	1934	Chickasha, Okla.
Smith, Carlton Earl	1909	Hinton, Okla.	Oklahoma Univ.	1934	Henryetta, Okla.
Neff, Everett B.	1911	Oklahoma City, Okla.	Oklahoma Univ.	1936	Henryetta, Okla.
Fry, Francis Polk, Jr.	1909	Frederick, Okla.	Oklahoma Univ.	1936	San Francisco, Calif.
Strecker, William E.	1909	Pond Creek, Okla.	Oklahoma Univ.	1936	Oklahoma City, Okla.
Stokes, Lowell L.	1906	Protection, Kans.	Oklahoma Univ.	1936	Tulsa, Okla.
Goodman, Hubert Thorman	1900	Cleveland, Ohio	Oklahoma Univ.	1936	Santa Monica, Calif.
Jones, Ruth Belcher (F)	1898	Marlow, Okla.	Oklahoma Univ.	1936	Seminole, Okla.
Cunningham, John A.	1906	Miami, I. T.	Oklahoma Univ.	1936	Oklahoma City, Okla.
Butcher, John Mack	1912	Kansas City, Kans.	Oklahoma Univ.	1936	Edmond, Okla.
Johnston, L. A. Sybert	1909	Hopkinsville, Ky.	Oklahoma Univ.	1936	Norman, Okla.
Ingalls, George Sam	1912	Stroud, Okla.	Oklahoma Univ.	1936	Boston, Mass.
Tichenor, Ernest LaPoint	1903	Morganfield, Ky.	Oklahoma Univ.	1933	Anadarko, Okla.

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THE JOURNAL

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VOLUME XXX

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Number 9

Symposium on Tuberculosis

Why Look for Tuberculosis

CARL PUCKETT, M.D.
OKLAHOMA CITY

The downward trend of tuberculosis since the beginning of the organized campaign against it in 1904 is familiar to most people, as well as physicians. Since the present rate is little more than one-fourth that which existed at the beginning of the century, the impression is far too prevalent that tuberculosis is not now a serious problem. Yet it still is an enemy of mankind that is in seventh place among causes of death; and it ranks first in the productive years from fifteen to forty-five. The fact that its victims suffer extended illness with semi-invalidism for those who recover and that it leaves more dependents than any other disease is an emphatic reminder of its cost, even with the reduced death rate.

A factor that must now be faced is an apparent slowing up of this downward curve in death rate throughout the country; in some states there has been an increase. That is true in Oklahoma with one thousand three hundred twelve deaths, an increase of twenty-three per cent for 1936 over 1935; however, this may be more apparent than real because of a much improved statistical service in the State Health Department. At least one encouraging feature of the Oklahoma statistics is that for ages under twenty-four a seventeen per cent reduction is shown. If this continues it will soon bring our tuberculosis mortality trend downward. Furthermore, it would mean that the special at-

tention given to childhood tuberculosis on the part of physicians, tuberculosis associations and sanatoria the past few years is bearing fruit. Certainly there is every reason to expect this result from such a program.

From the beginning of the organized campaign the strategists of the tuberculosis fight have concentrated on mass education. With this familiar program, however, continued research has been carried on. This increased knowledge of tuberculosis has changed the situation until what we formerly termed an "early" tuberculosis case is now recognized as "advanced" tuberculosis. Many physicians will recall that Dr. J. D. Riley, Superintendent of the *Arkansas Tuberculosis Sanatorium*, at the Post-Graduate Course on Tuberculosis in Tulsa last fall, repeatedly stated that when tubercle bacilli are found in the sputum it is an "advanced" case. This means that physicians must use other means of diagnosis than the microscope and stethoscope.

Because tuberculosis has always been classed as a poverty disease the problem has been looked on as a social one, with the medical phase taking second place; the fact that tuberculosis reduces its self-supporting victims to a state of poverty has largely been overlooked. In either case, however, the poverty angle has been a reason why physicians could not afford to devote much time to it. Furthermore,

since tuberculosis has been recognized as a curable disease, physicians have given it little attention because it has been chiefly a matter of sanatorium treatment. Therefore, many progressive physicians are unfamiliar with the present status of scientific tuberculosis treatment and care; that the disease may now be treated in a pre-clinical state; that continued progress toward tuberculosis eradication depends on a program of searching out infected children and young people and giving them care that will assure prevention of active tuberculosis. This is a program wherein physicians are essential to progress. The medical profession should find it worth while to give this phase of practice considerable attention; these patients, few of them ill, from all types of homes, in many cases have parents able to pay for whatever care is needed; and because of a justifiable fear of tuberculosis they will be in the right mental attitude to stick to their doctors.

In the present status of the tuberculosis movement, wherein the service of the medical profession is indispensable, there is a tendency in some states to lean toward a "state medicine" program. Listen to the following by the Committee on Standards for tuberculin testing and x-ray of the tuberculosis association of one of our large states: "Wherever tuberculin testing and x-ray demonstrations are started, arrangements shall have been completed for giving the tuberculin test and x-ray to the student without cost to the student." The policy of the tuberculosis association in this state, however, from the beginning of this type of program five years ago has been to refer all tuberculin reactors to the family doctor; not only for x-ray but for all other follow-up treatment; the exceptions are those financially unable to obtain this service. The school tuberculin tests are given free merely as a case-finding measure. There is no other way to find the great majority of infected children and young people. The fact that three-fourths of the thousands tested and found positive do not know they have been exposed to tuberculosis emphasizes the importance of these school survey clinics. Also, they acquaint the people with this procedure in early diagnosis of tubercu-

lous infection and create a demand for the tests by private physicians. Furthermore, it serves to inform the public about other phases of scientific progress in tuberculosis prevention, early diagnosis and treatment. The physician who fails to fit into this scheme of things is missing an opportunity for increased income as well as service to his people.

The nationwide program for eradication of tuberculosis will continue without doubt. It is just as certain to be carried to a successful conclusion; this appears feasible with our present knowledge of the disease, even in the face of recognized difficulties. To some extent each state will work out its own plans. In other states than the one referred to above no doubt attempts will be made to provide all the follow-up care from public funds. In Oklahoma we feel confident the physicians in private practice can play a leading role in tuberculosis eradication; this, of course, with the aid of the state and local tuberculosis associations, and Health department searching out the infected children and young people, and sending them to their family doctors. Here is an opportunity to meet the issue of state medicine.

The recognized procedure in children and young people when looking for early tuberculosis, and infection before it becomes active is the tuberculin test, and x-ray of reactors. The latter is made in those apparently well, not with the expectation of finding anything except occasionally, but to be sure the infection has not become active. This x-ray observation should be an annual routine from adolescence through a ten-year period. Other phases of health supervision are important, including correction of defects and maintenance of a high state of health. The tuberculin test and x-ray is also the procedure used in searching for carriers.

SUMMARY

In tuberculosis we are confronted with a disease that is widespread, present in every county in Oklahoma. After a continued reduction for more than thirty years there is now a cessation of the downward trend. With the newer knowledge of the disease its treatment seems made to order for physicians in general

practice—that is the pre-clinical and early clinical cases; the advanced, including most of the infectious cases, still belong to the sanatoria. Furthermore, the great number of unrecognized carriers who are infecting these children and young people should be in the hands of competent physicians. Many of these may be found by tracing the source of infection in the tuberculin reactors found among children and young people.

In order to aid in evaluating the present situation in regard to early treatment of tuberculosis, the importance of procedures we have suggested and to give reasons for optimism in regard to progress in eradication, several quotations are given below:

Dr. J. Burns Amberson, Tuberculosis Service, Bellevue Hospital:

" . . . Intelligence in the patient alters the situation very little. In our experience with trained nurses at Bellevue Hospital, two-thirds of those who develop tuberculosis do not ask for a medical examination in the early stages. In fact, the symptoms of early disease are so slight and so vague that people cannot be expected, as a rule to identify them as anything abnormal. It is my belief that public health education alone, valuable as this is, will not be highly effective in changing this circumstance."

Tuberculosis Committee of the American Association of School Physicians, Dr. J. A. Myers, Chairman:

"The stress laid upon tuberculin surveys by the committee was based upon their recognition that the best criterion of the tuberculosis problem in any community is the incidence of positive reactors among the children, including the high school age."

Dr. Hilbert Mark, Minnesota Tuberculosis Sanatorium:

"There is an average period of two and one-half years from the first parenchymal lesion of reinfection tuberculosis to the first symptom. As a consequence, the patient at the time he sees his physician, has developed a disease

which is usually far advanced and one of serious intent."

Drs. Diehl and Myers, Minneapolis:

" . . . Inasmuch as tuberculosis in a communicable form occasionally co-exists with the condition for which the patient is admitted to the hospital, the University of Minnesota now requires that on admission all patients, regardless of complaints, have the tuberculin test administered, and that those who react positively have an x-ray film of the chest."

Queries and Minor Notes, Journal of the American Medical Association, April 10, 1937, page 1281:

" . . . Indeed, there is an average period of approximately two and one-half years after chronic pulmonary tuberculosis can be detected before the patient has any sense of ill health whatever."

Queries and Minor Notes, Journal of the American Medical Association, May 1, 1937, page 1560:

" . . . However, the fact has been well established that children who have the primary complex are far more likely to fall ill from clinical tuberculosis as adolescence approaches and thereafter than those who have not developed such a complex during childhood. Therefore, knowing through the positive tuberculin reaction that such a complex exists is sufficient reason to recommend that every child who reacts to the tuberculin test in a positive manner be most carefully examined, including the use of the x-ray film, as adolescence approaches, and if no clinical disease is detected the examination should be repeated at least annually."

CONCLUSION

In the state tuberculosis campaign we are grateful for the helpful support of our fellow-members of the medical profession. It is our hope that we may have this co-operation even more actively in the future. With this united offensive it is our confident belief that tuberculosis will, within a few years, be practically eradicated in Oklahoma.

*Tuberculosis of the Throat**

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I am presenting this paper, not with the idea of adding anything new or startling, but merely wish to review five cases which I happened to observe while in the Clinic at the Eye, Ear, Nose and Throat Hospital in New Orleans. The prime object of the paper is a plea for an early diagnosis of this condition.

Tuberculosis of the throat is simply one of the many manifestations of this devastating disease, but it is one that most particularly concerns the otolaryngologist.

The first recorded article on this subject was that by Morgagni prior to 1767. Since then a great deal has been written, more indeed since the invention and use of the laryngoscope by Gorcia in 1855.

This disease is caused by the tubercle bacillus and is almost always secondary to pulmonary tuberculosis. Spencer states that he has never seen a primary infection during twenty years of his practice. Arrowsmith, Levy, Hastings, Sir St. Clair, Thompson, and Dworetzky corroborate Spencer's remark. Dworetzky reports the disease most frequent between the ages of twenty and forty-five years. It is extremely rare in children. Males are more subject to it than females, due probably to greater exposure and the more extensive use of tobacco and alcohol.

The subjective symptoms may be summarized by the findings of the one hundred cases, sixty-five males and thirty-five females, reported by Taylor and Nathansen. They found hoarseness in eighty-five, laryngeal pain in eighteen, dysphagia in seven, aphonia in nine, dryness in the throat in nine, and tickling in the throat in four. To this list may be added dyspnea, which Spencer found as a frequent complication.

Objectively we find conditions varying from anemia of the larynx and epiglottis to marked redness and deep infiltration of the interarytenoid region. Tuberculomata

may be present in any part of the larynx or pharynx. Ulcers vary from superficial to quite deep seated and extensive lesions. Edema, causing great alarm and much discomfort, may be encountered.

In making a diagnosis it is essential to have the cooperation of the internist and his confirmation of the pulmonary findings. In making a differential diagnosis, we have to rule out syphilis, carcinoma, chronic catarrhal laryngitis and rarely actinomycosis.

In treating tuberculosis of the throat we have to bear in mind that this condition is not in itself a true entity, but a complication usually secondary to pulmonary tuberculosis. The capable otolaryngologist recognizes this fact after he has made the diagnosis and solicits the aid and cooperation of a competent internist who assumes responsibility for the care of the chest condition.

The local treatment of the throat may be divided into medical and surgical. One type may be used with one individual and another type with another individual. This means that different patients respond to different forms of therapy and the success of the treatment depends upon the care and the technique provided.

Surgically, we are justified in removing extensive infiltration areas and curettement of tuberculous ulcers as advocated by Herking, Lake and Krause. This type of work can now be done by the electric cautery under local anesthesia with less trauma, less loss of blood and less shock to the patient. The cautery snare is used for amputation of the diseased portion of the epiglottis.

The purpose of the electric cautery is to produce an eschar rather than to try to eradicate all the tuberculous tissue. Following the eschar, granulation tissue produces new blood vessels and more nutrition to the affected part. This fact adds to the popularity of the electric cautery but it must be remembered that it has to be used with judgment and skill. It is considered better technique to do repeated cauterizations rather than produce too extensive eschares.

Vocal rest is one of the most important factors in curative treatment. This means

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absolute vocal rest, requiring the patient to use the pad and pencil.

Topical applications to the throat at the site of the lesion are best tolerated in an oily base. Many drugs have been tried and many have been discarded. Chaulmoogra oil, used first by Lukens in 1921 who made the statement that it was the best local treatment up to the present time. This oil is known to have relieved dysphagia after one application. It may be injected into the larynx or it may be applied by direct swab.

Formalin is also recommended for local treatment, beginning with three per cent, the strength may be increased up to fifty per cent as the patient's tolerance permits.

Lactic acid has been used but it is quite painful and its use has been curtailed.

A few drops of compound tincture of benzoin on loaf sugar allowed to dissolve in the mouth often relieves that dryness and tickling sensation in the throat which is at times quite annoying.

The pain experienced by swallowing may be so severe that the patient prefers starvation to the excruciating difficulty of taking nourishment. This demands specific treatment in order to preserve the general condition of the patient. Cocain, metycaine, procaine, or butyn sprayed into the throat just before eating allows the patient to overcome this painful swallowing. Wigglesworth, in the Veterans' Hospital, uses orthoform and anestheline, equal parts insufflated into the throat with good results.

Mild inhalations of camphor and menthol and compound tincture of benzoin, give relief in some cases.

Blocking of the internal branch of the superior laryngeal nerve is perhaps the most effective means in controlling painful dysphagia. This idea was originated by Hoffman in 1908. It consists of an injection of eighty-five per cent alcohol into the nerve as it leaves the thyrohyoid foramen in the thyroid cartilage. This is a safe procedure and gives relief for several weeks. Medically we depend upon the application of a topical anesthetic for dysphagia or if necessary, upon the injection of the laryngeal nerve with alcohol. Vocal rest is essential.

Surgically, the use of the electro cautery with the production of an eschar in the diseased tissue, is the accepted method.

CASE NUMBER ONE

P. M., white adult male, age thirty-four; markedly emaciated; height five feet, eight inches; weight one hundred ten pounds.

Chief Complaint: Hoarseness; difficulty in swallowing; loss of weight (twenty-one pounds in past month); onset sudden, cold and pharyngitis following exposure while working.

Past History: One of twelve children, all of them alive except one who died from a skull fracture. Parents living. No family history of tuberculosis.

Physical Examination: Poorly developed, poorly nourished, anemic adult male. Eyes sunken, face and neck wrinkled. Tongue presents a geographic appearance. Pharynx congested and pillars inflamed. Epiglottis shows ulcerated area involving the tip and extending to the base in the mid-line. Swollen edematous finger-like flaps remain in the lateral border. This whole area is reddened and swollen. Arytenoids are red and edematous. Cords hard to see due to swelling of the arytenoids, but they seem to be normal. Chest: No rales heard.

X-ray: Extensive active pulmonary tuberculosis both lungs.

Follow-up: When last seen about two weeks later his condition was about as described above.

CASE NUMBER TWO

J. M., white adult male, age forty years; weight one hundred forty pounds.

Chief Complaint: Hoarseness past two months. Pain in throat. Difficulty in swallowing. Loss of weight (two pounds in past two months).

Past History: One of six children, three of whom died in infancy, of cause unknown. No family history of tuberculosis. Patient is the father of two children in good health.

Physical Examination: Patient is a fairly well developed adult male. Pharynx red. Tongue coated. Epiglottis congested and indurated. Arytenoid swollen and edematous. Cords appear normal except

for slight limitation of motion. Chest is negative clinically.

X-ray Report: Extensive infiltration upper half both lungs, probably active. Pulmonary tuberculosis.

Follow-up: Patient last seen about two weeks later. Condition about the same.

CASE NUMBER THREE

F. G., colored adult female, age twenty-five; weight ninety pounds; height four feet, eleven inches.

Chief Complaint: Pain in throat. Anorexia. Hoarseness upon getting tired. General malaise. Spitting up blood.

Family History: One brother at home now with active tuberculosis. Mother living and well. Father killed in an accident.

Past History: Patient slept with a sister who died of tuberculosis. Came to clinic and was treated for above symptoms. Weight at that time was seventy-eight pounds.

Physical Examination: Poorly nourished adult female. Teeth good condition. Pharynx red. Post-nasal discharge. Arytenoids swollen and red. Epiglottis fixed and pale. Cords pale.

X-ray Report: Early pulmonary tuberculosis both lungs. Most marked in the right.

Follow-up: Patient seen four weeks later in clinic and she looked fine. Weight ninety-four pounds. Appetite good. No throat symptoms. No hoarseness.

CASE NUMBER FOUR

A. O., white adult male, markedly emaciated, age sixty-six; weight one hundred seven pounds.

Chief Complaint: Hoarseness. Chronic recurrent sore throat. Loss of weight. Anorexia.

Past History: Usual childhood diseases. No history of tuberculosis in family, but was treated about a year ago for tuberculosis and was told he had no active condition.

Physical Examination: Anemic, emaciated adult male. Eyes dull and sunken. Nasal septum deflected to right. Pharynx red, vessels prominent. Epiglottis entirely missing, leaving an ulcerated area at base of the tongue. Arytenoids red and swollen.

Cords appear normal in appearance and function. Chest sunken and ribs prominent. Expansion limited. No rales heard.

X-ray Report: Fibrosis both lungs but no evidence of active disease. X-ray report from another hospital showed fibrosis in both apices and through both lungs, in 1936. Acid fast organisms found in the sputum at this time.

CASE NUMBER FIVE

A. M. K., white adult female, age thirty-two years.

Chief Complaint: Hoarseness. Temperature 99-100. Painful and difficult swallowing. No loss of weight.

Past History: No family history of tuberculosis. No known exposure to tuberculosis. Has always been well until recently when she had a sore throat with lots of pain upon swallowing. Delivered her third baby eight days before admission to hospital. Her condition has been progressively worse since delivery.

Physical Examination: Patient is a poorly developed adult female suffering with severe sore throat. Complexion pale and she is anemic. Heart: No enlargement or no murmurs. Lungs clear, no rales heard. Tongue coated. Uvula, both anterior pillars, pharyngeal tonsils and posterior border of veli palatini covered with greyish white confluent adherent membrane. Epiglottic tip also shows similar type of membrane. Unable to see cords due to extreme pain to the patient. Biopsy from anterior pillar showed tuberculoma.

X-ray Report: Extensive involvement both lungs of pulmonary tuberculosis.

Follow-up: Patient died about four weeks after the childbirth.

CONCLUSION

In conclusion may I mention these ideas which are referable to tuberculosis of the throat:

1. Laryngeal tuberculosis should be diagnosed early in order to get results.
2. Laryngeal tuberculosis is nearly always secondary to pulmonary tuberculosis.
3. Laryngeal tuberculosis occurs rarely in children and most often is found between the ages of twenty and forty.

ty-five, and is more common in men than in women.

4. Tuberculous throat lesions are often precipitated by pregnancy.
5. Tuberculosis of the throat can be cured, but only by early diagnosis and by the cooperation of the patient, the internist and the laryngologist.

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*Tuberculosis From the General Practitioner's Standpoint**

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The purpose of this paper is to discuss the problem both in diagnosis and treatment of tuberculosis to the general practitioner and its pitfalls. Various questions have arisen in this work which are believed to be not peculiar to any one practitioner, but to typify the difficulties of tuberculosis work in all general practices.

The diagnosis and treatment of tuberculosis meet many obstacles. In the diagnosis, we have to consider the typical and the atypical individual case and the question of epidemiology. The question of correct treatment must be given attention if the disease is to be controlled in the patient and also to prevent the spread of the disease to those who are not already infected. The family physician has a great burden and responsibility in these patients as he is the first with whom they consult.

During the time between the initial symptoms, early diagnosis, and arrest of the disease, the patient will usually be under the care of a sanatorium for his treatment, or a specialist trained in the more recent methods of treatment.

As most cases are treated by specialists while the disease is active, the general practitioner then loses interest in the diagnosis and epidemiology. He doesn't carefully study the symptoms and history of the disease. This is unfortunate for the general practitioner should be alive to the problem—too, his patients and their families will, after all, return to him for guidance and advice. He will be the one to advise as to marriage. He will be the one the young woman will depend upon for guidance as to when it will be safe for her to bear children.

Since the mantoux tuberculin test has appeared in the regimen of tuberculosis, many of the atypical cases of early tuberculosis have been discovered and held under observation with a diagnosis which contributes to the short time and good results of treatment. In making the diagnosis of early tuberculosis, there are seven cardinal points to be considered:

I. HISTORY

Close inquiry should be made, if possible, as to intimate contact with a tuberculous person. Often inquiry will disclose that an uncle, aunt, or grandparent died with a chronic condition that most likely in this day's method of diagnosis would be diagnosed as tuberculosis; or the father or mother may be suffering with a chronic illness that needs only an examination to make a diagnosis of chronic tuberculosis.

II. SYMPTOMS

The symptoms may be typical or atypical—insidious or sudden. Frequently the disease will begin with symptoms that may be diagnosed as an acute cold, influenza, or pneumonia, but differing in that recovery is delayed. Or it may be insidious with a gradual loss of strength or endurance, loss of weight, progressively or marked over a few months time, and a slight elevation of temperature in the afternoon. In determining the fever, a certified thermometer should be used and remain in the mouth of the patient not less than five minutes and taken every

*Read before the Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May 13, 1935.

three hours over a period of ten days or two weeks. Pulse rate when increased to eighty or more in males and ninety or more in females should be given some significance. Cough, expectoration, hemoptysis, hoarseness or huskiness, and pains in the chest are frequent presenting symptoms.

III. PHYSICAL EXAMINATION

Active early tuberculosis may exist without the examiner eliciting abnormal physical signs. The examination should be made by auscultation of the bared chest during inspiration after expiration and cough.

IV. X-RAY

Whenever possible and the method of choice, stereographic x-rays should be made and this is a necessary procedure in an examination of the chest. The writer wishes to emphasize at this point that the x-ray should not be used alone to diagnose tuberculosis or as a differential diagnosis. Too many times patients have been sent to x-ray laboratories for a diagnosis of a chest condition and expect the x-ray to make a diagnosis without considering the other adjuncts which we are discussing, and many serious errors are made.

V. TUBERCULIN TEST

The tuberculin test is of diagnostic value at any age. A positive reaction does not necessarily mean active tuberculosis, but a negative reaction speaks volumes, and when negative, other diseases must be searched for to determine the cause of symptoms. Contrary to some old ideas, the tuberculin test will not flare up an old condition nor do harm.

VI. LABORATORY TEST

The presence of tubercle bacilli in the sputum is a positive diagnosis of tuberculosis, however, a negative sputum test does not rule out tuberculosis.

VII. EXCLUSION OF OTHER DISEASES

There are many diseases that can produce some of the symptoms simulating tuberculosis, so a careful study must be made. Of six hundred patients appearing in the author's office in 1933 and 1934, only 33.5 per cent had tuberculosis—10.9 per cent were ill from sinusitis. There were some forty diseases in the category including bronchiectasis, bronchitis, malignancies, chronic tonsillitis, infected

teeth, pneumonia, thyrotoxicosis, etc., and all of the patients showed some symptoms of tuberculosis such as fever, cough, easy exhaustion, nervousness, rapid pulse, etc.

At this point I wish to recite the history of a pitfall case: Mrs. H. E. M., aged twenty-three, two children (two and three years of age), was seeing a family physician November, 1934, and her case diagnosed as influenza followed by what was thought to be pneumonia. She had a cough, expectoration, blood-streaked sputum, and was gradually becoming worse. Examination revealed fine and medium moist rales throughout the right lung increased by cough, and a few fine moist rales around hilus of the left lung. X-ray stereogram of chest showed cloudiness throughout entire right lung with small area of rarefaction in upper lobe indicating cavitation. Left lung, slight infiltration around hilus. This patient had lost thirty-five pounds in weight from November, 1934, to April 11, 1935, when seen by the writer. Sputum was positive for acid-fast tubercle bacilli. Mantoux tuberculin test was two plus. Temperature ranged from 99 to 101. Pulse rate from 100 to 120. Artificial pneumothorax was instituted after second treatment, cough and expectoration greatly diminished, and all other symptoms greatly alleviated.

Another case to illustrate the importance of examination in a throat condition: This patient, Mr. L. M., aged twenty-six, married, one child, went to his physician complaining of hoarseness and sore throat. Tonsils were removed November, 1934, without chest examination. He came under our observation March 16, 1935, complaining of sore throat and cough, inability to swallow, weakness, and loss of weight. Physical examination: Fine and medium moist rales throughout left lung, increased with cough. Fine moist rales throughout upper lobe of right lung with sputum positive for tubercle bacilli. Larynx and pharynx greatly ulcerated. Patient died four weeks later of tuberculosis.

The use of the tuberculin and x-ray in making your diagnosis would be more generally used if they were more intensively and extensively advocated and precaution should be made for the accurate interpretation. The family physician will

be consulted by the tuberculous patient for advice on some of the more recent advances in the treatment of tuberculosis.

The family physician will be consulted for advice on what artificial pneumothorax means, how it is given, and why it is used. Also the indications for thoracoplasty, intrapleural pneumolysis and other surgical methods as well as the extent of rest, and the value of dietetics, if hemoptysis is a serious condition and does it indicate tuberculosis? Should the patient have his tonsils removed?

Tuberculosis is still a common disease and the general practitioner sees it frequently but perhaps fails to recognize its significance.

After all, the early diagnosis and proper treatment is the important phase of his service in preventing the death of the patient and the spread of the disease to other members of his family.

* * *

DISCUSSION

Dr. C. E. Bates, Oklahoma City:

Dr. Shepard has outlined the cardinal signs of active tuberculosis. He has stressed the importance of a good history, gradual loss of weight, general malaise, increased irritability, pleural pains and loss of appetite. I do not disregard retraction of apex or apices, increased muscular tension, early relaxation or atrophy of the muscles later, impaired resonance and bronchial vesicular breathing, but he has outlined the cardinal findings of active tuberculosis especially in the early stage, that is, rales, toxemia, positive sputum, hemorrhage, pleurisy with effusion, cavities in pneumothorax, x-ray findings and tubercular tests. By rales he means persistent fine and minute moist rales. The examiner should instruct the patient in the proper method of breathing out and coughing. That is very important. The patient should be instructed to breathe through mouth, get all air out of lungs and then give one expiratory cough and listen in one spot with the stethoscope throughout expiration, cough and throughout that phase of inspiration. Toxemia is manifested by rapid pulse, elevation of temperature in afternoon. The typical fever of the tubercular patient is elevated in the afternoon, and subnormal in the mornings. A positive sputum confirms the

diagnosis but one should not hesitate to make a diagnosis of acute tuberculosis if two or more of the above signs are present. By hemorrhage is meant definite blood-tinged and blood-streaked mass present in active tuberculosis, but is more often found in bronchitis and acute respiratory diseases. Often is seen indications of active tuberculosis in massive hemorrhage, pleurisy with effusion in the absence of acute respiratory disease. Malignancy and cardiac decompensation is now considered in the diagnosis of active tuberculosis. The x-ray is of great importance, but the examiner should learn to depend a great deal on physical examination and should not look at the x-ray until after examination. It is better to consider a patient a tubercular suspect and make frequent examinations to determine the diagnosis rather than making the more serious mistake of overlooking an early case.

Dr. Fred H. Clark, El Reno:

There are those of you who remember the prejudice towards x-ray giving full value and I heartily agree. Many of you know that one of the earliest men to do anything with the x-ray in the chest and whom I had the pleasure of meeting in New York where we both happened to be paying a visit. Roentgen was in trouble over the ward surgery and examining surgeons in the hospital in which he was taking exception to the diagnoses made based on findings. He examined the films of a chest and then examined the patient with the stethoscope and pointed out that the two must go together. The x-ray man can be questioned. When the diagnosis is made without any knowledge of other things, that means the x-ray man should be on guard. Roentgen pointed to what might be termed a definite diagnosis from x-ray films and that is that you must always have involvement of the periphery of the lung in tuberculosis. I wish we could get in the mind of the people the idea of the early value of x-ray; that every child who reaches school age should have an x-ray of the chest. We will probably never live to see that much done. In many schools there are x-rays made of all children simply as a precautionary measure. Thus the child would be under supervision and watched. In a perfectly clear hilus, rest

assured you have a practically normal chest. In the adult, however, that is not the case, but the x-ray is of unknown value. If this government before the last war had examined the men by x-ray before entering the service more than \$100,000 at least would have been saved.

Dr. R. M. Shepard, Tulsa:

During these years of depression there are many patients without an occupation seeking disability, many of them claiming a lung disease. Particularly do we see patients that give a history of war service with gas irritation claiming disability. So in making a differential diagnosis of lung diseases, one has to be very careful in the study of the history and symptoms as well as the seven cardinal points outlined in my paper.

* * *

Renal Tuberculosis: A Clinical Study

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Renal tuberculosis is a disease of importance not only to the urologist but to every practicing physician. Affected individuals will be doomed to a slow and torturing end without recognition of their trouble relatively early, and the institution of proper treatment.

In order to more vividly portray this serious and distressing condition, I have taken for study the records of fourteen cases of renal tuberculosis admitted in the past five years at the University Hospital and treated by the generally accepted procedure of nephrectomy. All were proven to have had the disease by pathological examination of the removed organ. Salient features of their case records were abstracted, with emphasis placed on diagnosis and the results obtained by surgery.

There were eight males and six females; all in the white race with the exception of one man, a Filipino. Negroes rarely develop surgical tuberculous lesions of the kidney. Doubtless their inherently poor racial resistance to the disease produces

early death from chest involvement before chronic secondary lesions develop.

Renal tuberculosis is a disease of early adult life. In this series the average age incidence was twenty-five years; the youngest a boy of fourteen, the oldest a man of fifty-nine years. The right kidney was involved in twelve patients and the left in two, although no reason, other than a coincidental one, can be offered for this finding. Large series of statistics do not reveal that one kidney is more frequently involved than the other.

The earliest and most dominant symptom of the clinical course is frequency of urination which is soon followed by dysuria. Possibly some irritating toxin is formed by the bacilli which stimulates the sensory nerve endings of the bladder, as bladder manifestations seem to be out of all proportion to the size of the focal lesion; furthermore removal of the diseased kidney quickly produces a striking amelioration of the cystitic phenomena.

Bladder irritation so inevitably accompanies renal tuberculosis that without the complaint of frequency or dysuria a diagnosis of tuberculosis can almost definitely be ruled out. Bladder distress is a constant complaint, resisting all therapeutic efforts for its relief. Eleven of the fourteen patients studied definitely gave this as their initial symptom. Of the remaining three patients, one complained of pain in the affected kidney; another of pain in the testicle, simulating an acute epididymitis; and a third had a rather constant afternoon temperature, accompanied by a persistent loss in weight and strength. However, all patients on admission to the hospital complained bitterly of the bladder. It was definitely their chief complaint.

Although hematuria has been a widely publicized sign of tuberculosis of the kidney, in only one instance was bleeding of any consequence noted in the history. A small amount of blood in the urine, probably of bladder origin, was noted frequently due to the intense bladder congestion and inflammation. Cystitis from other causes could have produced the same finding.

Pyuria was a rather constant sign. The tubercle *per se* is not productive of much purulent material, but frequently due to

*Read before the Section on Genito-Urinary Diseases and Syphilology, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 11, 1937.

secondary bacterial invaders pus in the urine becomes a rather early and persistent finding. Thirteen patients presented pus in the urine in gross amounts, and one patient had only microscopic evidence of infection. As would be expected, the predominating secondary organism was the colon bacillus.

Pain in the kidney region is not a prominent finding. It is only in the later stages of the disease that it comes to the fore in the clinical picture. Distress ranging from a vague ache in the loin to attacks of severe colic was found in eight cases. Pain over the bladder region was a frequent complaint.

An enlarged kidney or tumor formation likewise was a relatively uncommon sign. In five instances were masses sufficiently large to be palpable. Three of these were found to be suffering from perinephric suppuration that required preliminary drainage before nephrectomy. This pus formation was undoubtedly due to cortical rupture of renal abscesses.

Similar to other tuberculous processes, the infection of the kidney shows a slow and insidious development and years may elapse before the individual finally succumbs to the disease. It is interesting to note that in only two patients the duration of symptoms was less than six months; three gave complaints of a year's duration; six stated they had been ill from one to two years, and three had symptoms extending over three years. Obviously, a disease of such slow progress demands no emergency treatment insofar as surgery is concerned. The physician can afford to give sufficient time for pre-operative preparation before subjecting a patient to nephrectomy. No excuse can be advanced to submit a debilitated, dehydrated, toxic patient to a major operation of this caliber on the basis that haste is important. Sometimes it may be advisable to give such patients a few weeks rest in bed before operation is justified.

The diagnosis of tuberculosis of the kidney rests basically upon the finding of tubercle bacilli in the urine. It is almost always necessary to make multiple smears of the urinary sediment from twenty-four hour collections. Repeated examinations often become necessary before the organ-

ism is found. Tubercle bacilli, as a rule, are few in number and frequently excreted in showers, with intervals between when no bacteria are present. No one should regard the urinary tract as free from infection until at least six specimens are examined diligently and thoroughly.

Cystoscopic and radiographic investigation, one or both, was performed on twelve of these patients. In all who had cystoscopic examination, the bladder was found to be hyperirritable, inflamed and held little fluid without pain.

In five instances ulceration suggestive of tuberculosis was prominent enough to merit recording. Radiographic findings were less productive of diagnostic significance. Of the twelve in only two was there evidence suggestive of ulceration of the pelvis and calices, shown by filling defects of the pyelographic contour. A diagnosis of a destroyed kidney was made in seven patients; three had unsatisfactory films for one reason or another.

Primary renal tuberculosis does not occur. Its origin can usually be traced to the lung. Often times the focal lesion of the lung is difficult to demonstrate. In seven cases roentgenographic studies of the chest were definitely positive for tuberculosis. Two patients suffered tuberculous lesions of the bones involving the spine.

There were four hospital deaths; a mortality of approximately twenty per cent. One patient died within a week following surgery from massive collapse of the lung; another on the tenth day from cerebral emboli, and two more, four and seven weeks respectively, from toxemia due to disseminated tuberculosis, chiefly of the lung.

Ten patients left the hospital; six having had a rather stormy post-operative course. Eight left the hospital feeling well, markedly relieved of their bladder symptoms, and to judge from the records, definitely improved by treatment. Two patients were unimproved. In only six instances was the wound completely healed at the time of dismissal; four had large open wounds that would probably necessitate months of treatment. Delayed closure of the wound is to be expected following operation on a tuberculous kidney when the pathology is advanced.

A complete follow-up of the cases was not obtained. Three have been traced for two years and one for three years. As far as could be determined, they are in satisfactory health at the present time.

All patients when dismissed from the hospital were advised to refrain from strenuous activities for at least a year. It is the opinion of this clinic that surgery is an important initial step in the management of renal tuberculosis, however, adequate rest in bed so long as signs or symptoms persist, a full diet, heliotherapy, and occasionally tuberculin therapy, may be necessary to gain complete control of the disease. Heliotherapy, properly given, has been found to be an excellent adjunct in the post-operative treatment of these individuals. It promotes a sense of well-being and definitely hastens the healing of the wounds.

CONCLUSIONS

Renal tuberculosis, a slowly developing, insidious pathological process, is a disease

of young adults. Unless treated scientifically it produces death of the individual, preceded by a painful disabling bladder lesion. Cystitis, a commonly encountered disease, is practically the only definite symptom. Signs and symptoms referable to the kidney are markedly absent. The diagnosis is relatively simple, providing the urologist keeps in mind the fact that tuberculosis is a diagnostic possibility in every instance of intractable cystitis.

A combination of bacteriologic, cystoscopic and radiographic study will in most instances make the diagnosis.

Treatment of the disease is essentially surgical, provided that only one kidney is involved and the other kidney is capable of supporting life.

The results obtained by surgery are sufficiently satisfactory to merit its use. In the majority of cases a fairly uniform therapeutic response may be expected; notably a gain in the general health and relief from the bladder symptoms.

Symposium on Poliomyelitis

*Poliomyelitis**

BEN H. NICHOLSON, M.D.
OKLAHOMA CITY

The virus of poliomyelitis finds its way into the central nervous system by traveling directly along the axons of nerves. The most exposed nerve is the olfactory and the consensus of opinion is that in the vast majority of instances the virus travels by way of the olfactory nerve through its ultimate communications with the spinothalamic tract to the anterior horn cells of the cord.¹ Many features of the disease are adequately explained by this mode of invasion. Many others are not. It is difficult to understand why only eight patients among six hundred twenty-two cases of

poliomyelitis in North Carolina, in 1935, gave a history of exposure² if the disease is spread by droplet infection. Furthermore, in Oklahoma this year the disease has not spread from one locality to another, but has appeared in most all parts of the state at the same time. Quite like the diarrheal diseases, the highest incidence is in the late summer and early fall. Advocates of the olfactory nerve origin of the disease trace the disease through the brain stem to the cord, and yet there are many instances in which the disease is seen to progress from the lumbar region upwards.

While poliomyelitis has never been experimentally produced by way of the gastro-intestinal tract, except after the intes-

*Submitted by the Secretary of the Oklahoma Pediatric Society at the request of the Secretary of the State Medical Association. The context of the article has been approved by the Board of Directors of the Pediatric Society. To conserve space the authorities quoted are given by reference only.

tinal tract has been injured, the disease that follows inoculation into traumatized gut in monkeys more closely resembles the disease as it occurs in man.³ Who can say but that the intestinal tract of the small child is frequently traumatized by foreign bodies, indigestible food material, diarrhea or purgatives? Suffice it to say that from an epidemiological standpoint we cannot ignore the possibility of other portals of entry than the olfactory nerve.

The incubation period of poliomyelitis is from seven to fourteen days, and the disease is ushered in rather suddenly with signs of generalized infection, consisting of fever, malaise, headache, and quite often vomiting. This is followed immediately or within a day or two by the signs of involvement of the central nervous system. There is nothing typical or definite about these signs, but the most frequent ones seen are:

1. Disturbance of sleep. The patient is drowsy or has a reversal of the schedule of sleep, much like a patient with encephalitis.
2. Peevishness and sensitiveness to touch.
3. Rigidity of the neck and resistance to flexion of the spine, and pain on attempting to sit up.
4. Head drop—inability to raise the head when the shoulders are elevated from the bed, the patient lying flat on his back.⁴
5. Reflex abnormalities which vary a great deal.

The disease then progresses to the stage of paralysis, with deep muscle soreness in areas, which is indicative of involvement of the posterior ganglia. In the majority of cases the paralysis appears on the third day of illness but there is always danger of paralysis or progression of paralysis as long as the patient has fever. The disease may not progress further than the initial stage or the meningeal or preparalytic stage, in which case the diagnosis will probably be missed unless the spinal fluid is examined. About thirty to forty per cent of the patients who are definitely diagnosed as having poliomyelitis, go on to the paralytic stage.

A certain number of children have the

dromedary type of the disease described by Draper. The first stage develops and then the patient is up and about for several days, apparently perfectly well. He then begins to run fever again and to show the signs of involvement of the central nervous system, with or without development of paralysis.

An early diagnosis depends on the acumen of the attending physician and can only be accurately made by examining the spinal fluid. Inasmuch as the cell count may be only slightly increased, spinal fluid examination is of practically no value unless it is examined immediately, before the cells have had a chance to settle in the bottom of the tube. Care must be taken to avoid traumatizing the plexus of veins which lie anteriorly in the spinal canal, because a bloody fluid is of little diagnostic value.

TECHNIQUE OF SPINAL FLUID EXAMINATION

1. Draw a little glacial acetic acid into a white pipette and allow it to run out. Enough will stick to the walls to hemolyse the few red cells present.
2. Draw a little spinal fluid and shake gently, then place on counting chamber, being careful not to get an excess. Count the cells in all nine big squares, multiply by ten for depth of space and divide by nine.
3. To test for globulin drop one cc. of spinal fluid drop by drop into a small test tube containing one cc. of Pandy's reagent (saturated solution of phenol in distilled water, prepared by adding twenty cc. of melted carbolic crystals to two hundred cc. of distilled water and placed in incubator for two or three days, and then pouring off the clear supernatant fluid to use as Pandy's reagent).⁵ If the spinal fluid shows a white cloud the globulin is positive. The change may be very slight and can best be seen against a black background. The ammonium sulfate test may be used, in which a completely saturated solution of ammonium sulfate is overlaid with suspected spinal fluid. A clear cut, gray-white ring will appear between the two liquids within a few seconds if the globulin is posi-

tive. Under normal conditions a ring may appear in five minutes.⁶

4. For practical purposes a qualitative test for spinal fluid sugar is valuable in differentiating poliomyelitis in which the sugar content is normal or increased, from tuberculous meningitis in which the sugar is greatly reduced. Fill a small test tube about two-thirds full of Benedict's reagent and overlay this with about two cc. of spinal fluid and heat the upper portion to boiling over a Bunsen burner. If the sugar is normal or above a grayish-yellow precipitate will form. If the sugar is low very little or no change will occur.

If there is any question at all about the diagnosis a spinal puncture should be done. The cell count is usually more than ten and less than two hundred, although it may be as high as five hundred to one thousand. The globulin reaction is positive, although the writer recently had a patient with the meningeal form of the disease which did not progress and in which the globulin was negative. The globulin persists longer than the pleocytosis and unfortunately after the first two days of observation the spinal fluid was not examined. The spinal fluid sugar, as stated above, is normal or increased.

The local treatment of the paralysis in the acute stage consists principally of complete immobilization of the affected part or parts and is described in this issue of *THE JOURNAL*. Much data has been published on the value of convalescent serum in the prevention of paralysis. At the present time it appears that the value of convalescent serum is questionable,⁷ and that it should certainly not be given intraspinally. The data available would indicate that serum or blood from a single individual who has had the disease may have a very low neutralizing value, and the blood or serum from a normal healthy adult may have a relatively high neutralizing value.⁸ There seems to be no very decided advantage in finding a single donor who has had the disease.

In this state we do not have the facilities for collecting and storing convalescent serum and it has been the practice in Oklahoma City to transfuse the patient in

the preparalytic stage from an individual who has had the disease, if possible; if not, from a healthy adult. While the value of such a procedure is questionable, it is desirable for the possible benefit to be obtained. It should be remembered that the inherent immunity that an individual possesses is not an humeral one but seems to be dependent on the resistance of the nerve tissue itself,¹ and, therefore, too much cannot be expected from the transfer of circulating antibodies from one individual to another.

The striking success of sulfanilamide in the treatment of streptococcus meningitis has opened the question of whether it might not be of value in the treatment of poliomyelitis, inasmuch as the drug reaches a high concentration in the cerebro-spinal fluid shortly after administration in full doses is begun. Two patients in the preparalytic stage have been treated with sulfanilamide with the development of a minimal degree of paralysis,⁹ but only about one-third go on to paralysis anyway. Enthusiasm unrestrained is in danger of discrediting the drug now, but since other methods of treatment are of so little value the Pediatric Society would like to have reports of its use and would recommend that if it is used the patient be given three cc. per pound of body weight of the 0.8 percent solution subcutaneously, up to three hundred cc. the first day, and one gm. of the tablets per twenty pounds of body weight by mouth daily thereafter, if the patient is able to take it. This is to be taken until the paralytic stage has definitely developed and the temperature is normal, or until it is apparent that it is not going to.

There was a time when observers felt that much of the permanent damage to the anterior horn cells was due to generalized oedema of the cord. We now know that while oedema and general inflammatory reaction may be present it is not always, and that the anterior horn cells are destroyed by the virus itself.¹ For this reason repeated spinal drainage is not necessarily desirable. After the diagnostic puncture, however, drainage should be repeated as needed for the comfort of the patient, if he continues to have much headache and generalized aching and soreness which interfere with his rest.

Respiratory distress in poliomyelitis may be divided into three groups. (1) Failure of the respiratory center from involvement of the center by the virus, (2) accumulation of mucus and saliva from involvement of the muscles of the pharynx, in which case frequent cleansing of the pharynx by suction is the treatment of choice, and (3) paralysis of the diaphragm and intercostal muscles, which, if complete, is best treated by a respirator if oxygen will not suffice.¹⁰

As stated above, the virus presumably enters the central nervous system by the olfactory nerve, but may also enter the nerve endings in the gastro-intestinal tract. Contact with many children should be avoided, particularly if that contact is in a closed place, such as birthday parties, picture shows, Sunday schools, etc. The health department feels that the city parks offer a lesser of two evils, since children who are not permitted to gather in the open in parks will gather in cellars, attics and spare rooms. The question of swimming pools is less clearly answered. Even if the water is chlorinated it seems that there is no better way of foreign material entering the olfactory area than when the head is submerged in water; nor could there be a better way of disseminating the virus from carriers than by blowing the water out of the nose. One of the best protections the body has is the coating of mucus that lies over the olfactory area. This coating may be interfered with by washing with water incident to swimming.

The incubation period of poliomyelitis is seven to fourteen days and contacts should stay away from other children for fourteen days after the last exposure. Patients should be isolated for twenty-one days. While the attack rate is low one is necessarily concerned when a child has been exposed to the disease. Some favorable reports of passive immunization have been published,¹¹ so that particularly when one child in a family has developed the disease it would probably be well for other children in that family to receive at once an injection of immune serum or blood; at least ten cc. of convalescent serum, or twenty cc. of pooled adult serum, or fifty to sixty cc. of adult citrated whole blood, intramuscularly.¹²

There has been a great deal of pressure brought to bear on the medical profession by patients who have been informed in the lay press of the value of nasal sprays in the prevention of disease. It has been shown that the spraying of the olfactory area with a solution of one per cent zinc sulfate will protect monkeys against infection when this area is inoculated with the virus of poliomyelitis.^{13 14} It has been recommended that such a spray be used prophylactically. The idea is appealing and in the hysterical atmosphere attendant upon the appearance of an abnormal number of cases, doctors and laymen alike are apt to grasp at anything without much consideration. Mothers have even had a druggist fix up a solution of zinc sulfate to use in an ordinary atomizer at home. In the first place, the principle of its use is to coat over the olfactory area. This means, of course, that the needle tip on the spray must reach above the middle turbinate. In spite of local application of cocaine the process is not without discomfort. The nose in most instances must be shrunk down first, and if there is a deviation of the septum application is very difficult. There is a violent reaction which lasts for about three hours, consisting of headache, sneezing, redness of the eyes, and general discomfort.

There is considerable doubt as to whether the olfactory nerve is the only means of invasion, and there is a possibility that if applied in a wholesale means the population might have a decreased immunity because the immunity may be produced by submorbid infections. On the other hand, if the virus enters the system through the gastro-intestinal tract there is no chance of preventing such an invasion by coating over the olfactory nerve.

There is at the present time, in Oklahoma City, a child who has unmistakable poliomyelitis who on three occasions within the accepted period of time had his nose sprayed with a zinc sulfate solution by a physician. The only conclusion that can be drawn is that this child was not protected by the spray. At any rate the procedure is in the experimental stage and until it can be studied more carefully one hesitates to recommend it.

The value of the vaccines developed by

Brodie and Kolmer has not been established and they are at the present time not recommended.

CONCLUSION

A brief discussion has been given of the current opinions of poliomyelitis. It is hoped that cases will be studied carefully by the individual practitioners and reports sent to the Pediatric Society so that they may be compiled for publication.

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Orthopedic Management of Anterior Poliomyelitis

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The season is far enough advanced to tell us definitely that we are in the presence of a vastly greater number of cases of infantile paralysis than can be accounted for by ordinary season incidence. There were almost three times as many cases reported in July, 1937, as have been reported in any previous month in Oklahoma; substantially more, in fact, than the total reported for any preceding year. While this is not cause for mass hysteria, it behooves us to take stock of the situation, in light of our past experience, so that we may be better prepared to handle

this vast increase in cases. Our attack on infantile paralysis must be in three major fields: first, preventive; second, treatment and cure of the acute disease; third, management of the paralysis.

In regard to prevention, I think it is fair to say that, so far, we have no definitely proven preventive measure which has stood the test of time. In the second phase; namely, the acute disease, there is no specific treatment either to check the disease or prevent paralysis. There are many measures which may have some value, but these will be discussed in another article. Suffice it to say that results have been very disappointing.

We have not, therefore, made any very substantial progress in treatment, prior to the paralytic stage. Management in the third stage presents an altogether different story. There is no longer room for doubt of the fact that careful, conscientious, and adequate treatment of the paralyzed muscles will result in minimizing the residual paralysis. Since it is in this field that such extensive progress has been made, at the risk of repetition, let me proceed to recapitulate the orthopedic management of this disease. (A large portion of this material has already been presented in a pamphlet published by the Oklahoma Commission for Crippled Children, and prepared by the Crippled Children's Committee of the Oklahoma State Medical Association.)

It is possible to divide this management into three rather poorly delineated sections.

First: The period from the onset of the paralysis to the subsidence of the acute symptoms in the muscles themselves. We have rather arbitrarily set this period as about six weeks from the onset of the disease.

Second: The period which covers the time during which active recovery of function of paralyzed or weakened muscles is obtained. Again, arbitrarily, we may say that this period will run from six weeks to about eighteen months, the major portion of recovery occurring in the early months.

Third: The period covering the time of rehabilitation by surgical procedures; such as, stabilization, tendon transplants, and

other similar methods used to provide substitutes for permanently paralyzed muscle groups; roughly, from eighteen months after the acute disease *ad infinitum*.

Our interest must center in the first two sections, and more primarily in the first; namely, the period of acute muscular involvement. During this stage we have one aim only. This is to provide complete rest of the paralyzed part, with the extremity immobilized in its most functional position. The immobilization must begin with the onset of the paralysis and must continue until all muscular tenderness has disappeared. Thus, with the onset of the disease, the child should be put at absolute bed rest, regardless of the extent of the paralysis. Of course, during the early stage, the child will probably be sick enough to remain in bed. However, it is not sufficient to keep him in bed only during this acute febrile stage. Involvement of the abdominal muscles and muscles of the back is very common, and bed rest is essential in order to prevent overuse of these muscle groups. All activity should be discouraged as long as there is any pain or tenderness demonstrable in the muscles. Our general aim, therefore, is rest of the entire organism with specific rest and support to the involved muscle groups. The involved extremity should be supported in the position of election, preferably by light, well-fitted plaster casts. Plaster casts have the advantage of fitting the extremity to which they are applied, and of being fool-proof, so that it is not feasible for the parents to remove the support in order to examine the extremity, move the joints, bathe the skin, etc., a tendency which is well nigh impossible to overcome. If casts are not available, supportive splints are entirely adequate, provided that it be emphasized to the parents, or others in charge of the case, that it is not permissible to remove the splints for any reason, other than to secure more proper fitting.

The cast or splint should be carefully fitted to give support in the correct position. In the lower extremity, the foot is placed at 90°, the knee slightly flexed, the hip slightly abducted and in neutral rotation. If the splint is for the leg only, and

does not include the hip, some attachment must be applied to prevent rotation of the leg at the hip or knee. In the upper extremity, where deltoid paralysis is particularly common, the arm should be at 90° with the body, the elbow at 90° and the wrist in a slightly cock-up position. Obviously, it is much better to provide well-fitting casts or braces. However, if this is not feasible, the more nearly any support fulfills the foregoing requirements, the more adequate it will be.

During this initial stage, there is absolutely no value, and there is undoubted harm in meddlesome treatment of the extremities. *There is absolutely no place for massage, manipulation, or exercise in the early management of infantile paralysis. The only proper treatment in this early stage is rest.* By this is meant, rest of the paralyzed muscle, rest of the body, and rest of the mind. No other regime will give satisfactory results. The question arises as to the point of termination of the period of absolute rest. If an error is to be made, let it be in maintaining the rest over too long a period, rather than cutting this period short. An arbitrary limit of six weeks has been set. This, of course, is a definite figure for a variable period. The exact time can best be estimated by the condition of each individual case. Thus, in the last week of the initial period, the plaster splints may be removed on occasion and the extremity examined. If there is the slightest muscular tenderness, immobilization must be maintained. When the tenderness has disappeared, we may gradually slip into the second stage of treatment, at which time more active management is desired.

As the transition occurs from the initial stage to the secondary stage, the time arrives for careful initiation of massage, manipulation, and exercise, particularly muscular training. *Let me emphasize again, that the utmost care must be used in order to prevent overactivity.* At this stage, the child is inordinately tired of his long recumbency and may easily become over-enthusiastic. The parents are anxious to see immediate results and oftentimes encourage the child to perform beyond his

strength. The only safe criterion at this stage is fatigue. *Treatment must never be carried to the point of over-fatigue of the child.* Thus, in the ordinary case, support may be removed for a little gentle massage and careful motion, great pains being taken to support the extremity and to protect against the pulling effect of gravity. Weight bearing must be absolutely prohibited, if the lower extremities have been at all involved, or if there is major weakness in the abdomen or back. A safe policy is to prohibit weight bearing entirely for six months following the onset of the disease. This six months' period must be spent in conscientious effort to provide gradually increasing exercise for the weakened muscles. It must be emphasized again that throughout this entire period of six months, the extremities must be supported by continuation of apparatus for a very substantial period during the twenty-four hours. Each case must be sharply individualized in this respect.

Another major crisis arises with the beginning of weight bearing. Here again, it is possible, by a few hours of over-fatigue, to undo the labor of many weeks. If there is major weakness, support must be provided by braces. This is particularly true in the lower extremities, back, and abdomen. The least tendency toward deformity must be anticipated and corrected by supportive apparatus. Particular points to guard against are, deformity of the feet, hyperextension of the knees, and lordosis of the spine, with protuberant abdomen. Properly fitted braces will be of great help in preventing these deformities from becoming crippling.

It is, in my opinion, extremely important to keep a very accurate chart of the extent of impairment of various muscle groups. I may hasten to add that no effort should be made in this direction during the acute stage of the disease. With the removal of the initial support, however, and as some exercise is undertaken, it will be possible to secure the cooperation of the child and make a careful outline of the extent of involvement at that time. It is possible to secure charts for this purpose which list each separate muscle

group. On successive dates, a careful re-check should be made in order to determine progress of recovery. Under ordinary circumstances, there should be gradual improvement in the strength of the muscle groups. Any definite retrogression is a possible indication that the case is being overtreated.

It is, of course, impossible, in this brief discussion, to give in detail the various methods of physiotherapy. A few words may be in order in regard to the more publicized treatments. Hydrotherapy is of extreme advantage in the subacute stage of the disease. It is definitely contra-indicated during the acute stage; namely, the first six weeks. There is, of course, no specific therapeutic value of the water, its only function being supportive, largely in permitting active motion of the extremities which are too weak to overcome the pull of gravity. It is an adjunct to treatment.

In conclusion, allow me to quote a paragraph from the pamphlet printed by the *Oklahoma Commission of Crippled Children*. "In checking the progress of treatment of infantile paralysis in the past ten years, it appears that there has been tremendous progress in management. Statistics from older epidemics reveal the fact that the greatest majority of cases developing paralysis had definite residual paralysis at the termination of treatment. In more recent series, it appears that the number of cases with residual paralysis has been sharply curtailed. This has been almost entirely due to more conscientious and intelligent handling of the paralyzed muscles. There is little, indeed, to offer in the treatment of the acute febrile disease. There is much to offer in the management of the case as the acute symptoms subside. It is in this field of endeavor that efforts must be concentrated, until such time as something specific has been offered which will check the paralysis at its incipency. Careful management will permit temporarily paralyzed muscles to regain their function and will prevent development of deformities in those extremities which have permanent paralysis."

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EDITORIAL

SYMPOSIUM ON TUBERCULOSIS

In this issue of THE JOURNAL is a symposium on tuberculosis that will be of interest to every member of the medical profession in this state. It is probable that we are beginning to feel too secure relative to the handling of this disease, so much has been said about the decrease in the death rate and the earlier recognition of this condition, but imagine the consternation of the people in Oklahoma if it were reported that an epidemic of typhoid had taken one thousand three hundred twelve lives in our state. However, this is the number of deaths that occurred from tuberculosis in 1936, as shown by the Bureau of Vital Statistics of this state. The one way in which we may get control of this

dread disease is by obtaining an early and accurate history of each case.

Dr. William Devitt, physician-in-charge of Devitt's Camp, makes this statement: "The stethoscope, which has done more harm than all other factors combined, presents no criteria by which a definite diagnosis can be made until too late. There may be no suspicious sounds heard in a chest at the first examination, six months or a year later the serious condition in the chest is evident to both the physician and the patient." After the development of the disease the diagnosis can be positively made by sputum examinations and radiographic studies of the chest. The x-ray today shows up clearly practically all tubercular lesions, unless they are very small or located behind the heart. Every suspicious case should be x-rayed. Blood or blood-tinged sputum should always arouse the suspicion of tuberculosis, as very few of these hemorrhages come from any other organ but the lungs. So much for the person who has acquired tuberculosis.

The control of tuberculosis will depend upon the tuberculin test which has been discussed in one of the papers of this issue of THE JOURNAL and with the tuberculin test the carriers of tuberculosis can be found, treated and either isolated or taught to protect others with whom they may come in contact.

Let each of us give to the patient who comes complaining of being tired, having lost weight, or with blood-tinged sputum, the advantage of every means possible in making an accurate diagnosis and then being educated so that he will not communicate this disease to those with whom he comes in contact.

The death rate from tuberculosis has slightly increased in Oklahoma during the past year and no one can be blamed except the physician who first sees these patients.

Therefore, with so grave a responsibility let us meet it squarely and if not equipped to carry on adequate diagnostic procedures see that these patients are referred to some medical center where this service may be obtained.

CHANGE OF CLIMATE OFTEN UNWISE

Only in rare instances should Oklahoma physicians suggest a change of climate for

patients with tuberculosis. The consensus of opinion on the part of those specializing in tuberculosis in the southwestern states where most transient tuberculosis cases go is that a patient should have at least \$2,-400.00 to expend on recovery if he expects to get well in that country.

In an article, "Sick, Broke and Foot-loose," in the April *Journal-Lancet*, Dr. H. E. Kleinschmidt, Director, Health Education, National Tuberculosis Association, has the following to say about climate:

"Consideration of the need for a vigorous educational campaign in areas from which transients come, to point out the futility of bartering the chance to get well for the flimsy promise of a climatic cure. * * * To sacrifice home comfort, economic security and decent care for the elusive promise of climate is far more risky than hunting gold in Alaska."

POLIOMYELITIS

In this issue of THE JOURNAL we have two papers on poliomyelitis, one by a pediatrician and the other by an orthopedic surgeon. It has been noted in the daily press that there has been an increase in the number of cases of this disease, during the past sixty days, and we are glad to give to the profession of the state this information relative to the diagnosis and handling of this sort of case. Much can be done to prevent serious deformities and this can be accomplished only by early treatment and the prevention of serious contractures.

The subject is ably presented in these two papers and each physician who sees such cases, and many of us may, might well peruse these articles with great care.

OBITUARIES

DOCTOR GEORGE H. SIMMONS

1852 - 1937

Dr. George H. Simmons, Editor and General Manager Emeritus of The Journal of the American Medical Association, died in Chicago, September 1, 1937.

Doctor Simmons was born in Moreton, England, January 2, 1852. He came to the United States in 1870, and studied at Tabor College in Iowa in 1871 and 1872 and at the University of Nebraska

from 1872 to 1876. He received his M. D. degree from the Hahnemann Medical College, Chicago, in 1882 and was awarded the M. D. degree by Rush Medical College, following additional study, in 1892. After long consideration the Board of Trustees chose Dr. George H. Simmons for the position of General Secretary, which he filled from 1899 to 1911, and of editor, which he occupied until 1924. In 1901 he became also general manager. The Journal of the American Medical Association was established in 1883. When Doctor Simmons took over the editorial supervision and management, its total subscription list was approximately ten thousand. From that time it showed continuous improvement. Furthermore, under his leadership it became a significant weapon in the initiation and progress of great movements for the advancement of medical education and medical science.

To tell the story of Doctor Simmons' services in the period from 1899 to 1924 is, in fact, to tell the history of the American Medical Association in that same period.

In 1924 he resigned as Editor and General Manager of the American Medical Association and became Editor and General Manager Emeritus. At that time a number of leaders in American medicine arranged for the painting of his portrait, which was presented to him at a testimonial banquet in Chicago on June 9, 1924. Hundreds of physicians attended, and he received messages of appreciation and congratulations from all over the world.

This, then, is briefly the record of Dr. George H. Simmons as an executive and an administrator. His work for the American Medical Association was characterized by intelligence, unselfishness, initiative and righteousness. In his personal life he had his share of physical and mental suffering. He weathered storms of unjust criticism and false characterization of his administration. He devoted himself almost objectively and completely devoid of personal interest to the public career which he had chosen. Unquestionably he was the greatest factor in his generation in the development of the American Medical Association and the profession that it represents.

Editorial Notes—Personal and General

DR. G. W. BAKER, Walters, has been appointed County Health Superintendent of Cotton County.

DR. J. SAMUEL BINKLEY, of the Memorial Hospital Tumor Clinic, New York City, attended the wedding of his sister at the home of the parents, Dr. and Mrs. J. G. Binkley, Oklahoma City. He also spent some time during August in visiting with other relatives and friends before returning to New York.

DR. J. M. HARRIS, Wilburton, has been appointed County Health Superintendent of Latimer County.

THE SOUTHERN TUBERCULOSIS CONFERENCE will be held in Richmond, Virginia, September 29-October 1, inclusive.

DR. ONIS G. HAZEL has returned to Oklahoma City where he will associated with DR. CARL BRUNDAGE, in the Osler Building. Dr. Hazel has been doing post-graduate work in dermatology at Columbia University, and was on the Staff of the Vanderbilt Clinic, New York, for the past two years.

Post-Graduate Course on Tuberculosis in Oklahoma City, October 13

On October 13, 1937, in Oklahoma City, the Oklahoma Tuberculosis and Health Association will offer the physicians of this state a post-graduate course on tuberculosis. The large attendance in Tulsa last year was an emphatic reminder that there is a demand for this service.

Particular attention will be given to infections in childhood and youth where treatment may be largely carried out by the family physician. There will be clinics and x-ray demonstrations. On the program will appear the following well known physicians: Drs. F. P. Baker, W. O. Murphy, L. J. Moorman, R. M. Shepard, and J. A. Myers, Chief of the Chest Clinic, University of Minnesota and President of the National Tuberculosis Association.

There will be no charge and all physicians are invited.

Inter-State Postgraduate Medical Association Assembly in St. Louis October 18 to 23

The International Assembly of the Inter-State Postgraduate Medical Association of North America, under the presidency of Dr. John F. Erdmann of New York, will be held in the beautiful new public auditorium of St. Louis, Missouri, October 18, 19, 20, 21 and 22, with pre-assembly clinics on Saturday, October 16, and post-assembly clinics, Saturday, October 23, in the hospitals of St. Louis.

The aim of the program committee, with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

The St. Louis Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly. A tentative list of the distinguished teach-

ers and clinicians who will take part on the program may be found on page xxvii of the advertising section of this Journal.

A most hearty invitation is extended to all members of the profession who are in good standing in their State or Provincial Societies to be present. A registration fee of \$5.00 will admit each member to all the scientific and clinical sessions.

For further information, write Dr. W. B. Peck, Managing-Director, Freeport, Illinois.

Association of Military Surgeons Annual Convention in Los Angeles, October 14, 15 and 16

The Association of Military Surgeons of the United States is holding its forty-fifth annual convention at the Hotel Ambassador, Los Angeles, California, October 14, 15 and 16, under the presidency of Rear Admiral P. S. Rossiter, Surgeon General, United States Navy. This organization was founded by Colonel Nicholas Senn in 1891, and the object of the society was: "For the advancement of military and accidental surgery and all things pertaining to health and welfare of the civilian soldier." The membership is made up of all classes of medical officers, those of the Army, Navy, Public Health Service, Organized Reserves, National Guard, Veterans Administration, and retired officers who have served in a medical capacity in any of these services. The scientific meetings are devoted to medical problems in the service which may, in any way, influence the health and efficiency of our defensive forces. They are international in scope, as foreign governments send accredited medical officers as their official representatives.

A cordial invitation is extended to all members of the profession to attend these meetings where medical problems incident to the military personnel are taken up.

Efforts are being made for special train accommodations from Chicago for those in the east who plan on being present. Further information may be obtained from the General Manager of the Convention, Mr. Robert L. Lewin, 505 North Michigan Avenue, Chicago, Illinois.

Report of Licenses Granted to Practice Medicine

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Permanent or Present Address
Griffin, Wm. Flournoy, Jr.	1879	—, Alabama	Tulane University	1908	Watonga, Okla.
Brown, Walter Earl	1909	Beggs, Oklahoma	Washington Univ.	1935	Oklahoma City, Okla.
Drummond, N. Robert	1912	Columbia, Miss	Oklahoma Univ.	1936	Oklahoma City, Okla.
Lowrey, Robert Wayne	1911	Poteau, Oklahoma	Oklahoma Univ.	1936	Oklahoma City, Okla.
Gingles, Robert Hal	1906	—, Kentucky	Oklahoma Univ.	1936	Oklahoma City, Okla.
White, Eric McLain	1909	—, Oklahoma	Oklahoma Univ.	1936	Oklahoma City, Okla.
Vogt, William Leroy	1912	Oxford, Ohio	Oklahoma Univ.	1936	Oklahoma City, Okla.
Harrel, Don Grant	1911	Fletcher, Oklahoma	Oklahoma Univ.	1936	Oklahoma City, Okla.
Deupree, Harry L.	1908	Olney, Illinois	Oklahoma Univ.	1936	Oklahoma City, Okla.
Perry Frederick Johnson	1912	Greenwood, Ark.	Oklahoma Univ.	1936	Brooklyn, N. Y.
Sebastian, Jefferso J. B.	1908	Wewoka, Okla.	Oklahoma Univ.	1936	Vancouver, B. C.
Weaver, Glenn Shellhorn	1891	Pawnee City, Neb.	Kansas University	1923	Supply, Oklahoma
Searcy, Dan Beville	1909	Lewisville, Ark.	Tulane University	1934	Durant, Oklahoma
Oehlschlager, Frederick Keith	1911	Kansas City, Mo.	Kansas University	1935	Yale, Oklahoma
Metscher, Alfred John	1894	McPherson, Kans.	Washington Univ.	1927	Enid, Oklahoma
Eason, Keifer Killen	1898	Trent, Texas	Baylor University	1926	Tulsa, Oklahoma
Masterson, Maude Merle (F)	1911	Walters, Oklahoma	Oklahoma Univ.	1936	Oklahoma City, Okla.
Carson, John McMillen	—	Shawnee, Oklahoma	Oklahoma Univ.	1936	Shawnee, Oklahoma
Switzer, Fred D.	1908	Fort Towson, Okla.	Oklahoma Univ.	1936	Broken Arrow, Okla.
Kinsinger, Ralph Raymond	1909	McPherson, Kans.	Oklahoma Univ.	1936	Halstead, Kansas
England, Myron Christian	1906	Salida, Colorado	Oklahoma Univ.	1936	Boston, Mass.
Olsen, Harry Herman	1892	Willis, Kansas	Kansas University	1917	Miami, Oklahoma
Weaver, William Niebuhr	1908	Englewood, N. J.	Tulane University	1932	University, Va.
Baze, Roy Ellis	1910	Blanchard, Okla.	Oklahoma Univ.	1936	Chickasha, Okla.
Dorsey, Elizabeth (F)	1912	Johnson City, Tenn.	Oklahoma Univ.	1936	Oklahoma City, Okla.
Gaddis, Herman William	1907	Los Angeles, Calif.	Oklahoma Univ.	1936	Bartlesville, Okla.
Norris, Francis L.	1911	Okeene, Oklahoma	Oklahoma Univ.	1936	Supply, Oklahoma
McFarling, John M.	1903	Ben Franklin, Texas	Oklahoma Univ.	1935	Shawnee, Oklahoma
Homer, John Louis	1910	Minneapolis, Minn.	Oklahoma Univ.	1935	New York, N. Y.
Bradley, Frank Leo	1903	Eldorado, Okla.	Oklahoma Univ.	1936	Clayton, Mo.
Stewart, Oscar Wilhelm	1907	Olustee, Oklahoma	Oklahoma Univ.	1934	Muskogee, Okla.
Jarrett, Thirl Edwin	1913	Wetumka, Okla.	Oklahoma Univ.	1936	Brooklyn, N. Y.
Word, Harlan Lamar	1910	Booneville, Ark.	Oklahoma Univ.	1936	St. Paul, Minn.

Books Received and Reviewed

TREATMENT BY DIET by Clifford J. Barborka, B.S., M.S., M.D., D.Sc., F.A.C.P., Department of Medicine, Northwestern University Medical School, Chicago; Formerly Consulting Physician, The Mayo Clinic. Illustrated. Cloth, \$5.00. The C. J. Lippincott Company, Philadelphia.

This third edition is without doubt one of the best books on diet. It gives to the physician a concise, practical and systematic method of prescribing diets and applying treatment by diet to health and disease and will aid him in teaching the individual patient how to make a selection of the proper amount and type of food that has been prescribed for him. In this edition a discussion of the present status of the clinical aspects of the vitamins has been added, the present conception of the use of protamine zinc insulin is given and the discussion of obesity has been broadened.

The book is divided into four parts; the first, a brief but thorough discussion of the nutritive principles of diet in health, giving adequate requirements of the various foodstuffs for the normal diet, and their relative distribution in common foods. The second part, "The Application of Diet Therapy," gives the two methods of applying diet; by the use of (1) qualitative diets—diets from which certain articles of food are omitted, or (2) quantitative diets—diets in which any article of food eaten must be thought of in terms of carbohydrate, fat, protein and calories, and in which the quantitative estimation of these values is of utmost importance. Included in this chapter are tables and charts giving percentage values of various foods and household measurements of various weights of foods. This offers an excellent method of teaching the patient to visualize definite portions and servings of various foodstuffs. Section three, "Diet in Disease," gives a definition of the nature of each disease and the object of the diet. Sample diets are given, and the amounts to be used given in both gram weights and household measurements. Section four is a brief chapter giving routine hospital diets and special methods of feeding.

This book should prove of great value in both hospital and private practice.

PHYSICAL DIAGNOSIS, The Art and Technique of History Taking and Physical Examination of the Patient in Health and Disease, by Don C. Sutton, M.S., M.D., Associate Professor of Medicine, Northwestern University School of Medicine; Attending Physician and Chairman of the Medical Division of the Cook County Hospital; Chief of the Cardiac Clinic, Cook County Hospital, Chicago; Attending Physician, The Evanston Hospital. With 298 Text Illustrations, and 8 Color Plates. Price, \$5.00. The C. V. Mosby Company, St. Louis, 1937.

This book is well written and well constructed. It is well illustrated throughout and especially good are the radiographs of the sections of the body made in the Department of Anatomy of Northwestern University. The second chapter by Dean Irving S. Cutler upon the historical background of physical diagnosis is interesting. The fourth chapter gives a good outline for the taking and recording of a history and in addition there is a short discussion on the types of fever and their significance. A very complete discussion on the physical diagnosis of diseases of the lungs and heart by the methods of inspection, palpation, percussion and auscultation is given. Within the chapter on dis-

eases of the heart there is a short discussion with illustrations of the electrocardiogram. The last two chapters are on the physical examination of the abdomen and nervous system.

This will be of great value as a textbook on physical diagnosis for the medical student as well as the practicing physician.

MEDICAL UROLOGY, by Irvin S. Koll, B.S., M.D., F.A.C.S., Attending Urologist, Michael Reese Hospital, Chicago. With 92 Illustrations and 6 Color Plates. The C. V. Mosby Company, St. Louis, 1937.

I consider this book particularly useful for the general practitioner because of its instruction in diagnosis and application of treatment.

HANDBOOK OF ORTHOPAEDIC SURGERY, by Alfred Rives Shands, Jr., B.A., M.D., Associate Professor of Surgery in Charge of Orthopaedic Surgery, Duke University School of Medicine, and Chief of the Orthopaedic Service, Duke Hospital, Durham, North Carolina; Member of the American Orthopaedic Association, The American Academy of Orthopaedic Surgeons, and The International Society of Orthopaedic Surgery. In Collaboration with Richard Beverly Raney, B.A., M.D., Instructor in Orthopaedic Surgery, Duke University School of Medicine. Illustrated. The C. V. Mosby Company, St. Louis, 1937.

This work covers most of the author's subjects, especially relative to diagnosis, in a very thorough manner and with the 170 illustrations makes very plain the idea of the text. It does not go into surgical technic as thoroughly as some other works on this subject but would be a most excellent text for students rather than the man who is specializing in this line of work. It is divided into twenty-four chapters, well arranged and carefully indexed so that it may be used handily as a reference book. It contains valuable criticism by many of the leading orthopaedists of the United States and one may feel that in this text he is getting the opinion of the very best authorities. It will be a valuable book to any interested in this subject.

OBSTETRIC AND GYNECOLOGIC NURSING by Frederick H. Falls, M.S., M.D., F.A.C.S., Professor of Obstetrics and Gynecology, University of Illinois, College of Medicine; Attending Gynecologist of the Illinois Research and Educational Hospital; Attending Gynecologist and Obstetrician at Grant Hospital; Consulting Gynecologist at St. Luke's Hospital; Consulting Obstetrician at West Suburban, Swedish Covenant, Augustana, Norwegian, Lutheran Deaconess, and St. Vincent's Hospitals.

And Jane R. McLaughlin, B.A., R.N., Supervisor of the Department of Obstetrics and Gynecology, Research and Educational Hospital, University of Illinois, College of Medicine; Instructor in the Department of Obstetrics, University of Illinois, College of Medicine; Formerly Instructor in Obstetrics and Gynecology, Cook County Hospital School of Nursing; Supervisor of Obstetrics and Gynecology, University of Iowa; Supervisor of Obstetrics and Instructor in the School of Nursing, University of Maryland.

Illustrations by Charlotte S. Holt. Cloth. The C. V. Mosby Company, St. Louis, 1937.

This is a very complete work on the subject and covers in detail much of the material found in

books on surgical nursing, however, this brings the application of surgical nursing to the specialties of obstetrics and gynecology and can be recommended to any nurse who intends to do the best sort of work along this particular line. It is worth the time of any physician who specializes in obstetrics and gynecology to go through this book as there are many subjects that will be of advantage in the care of these patients.

SYNOPSIS OF DIGESTIVE DISEASES, by John L. Kantor, Ph.D., M.D. The C. V. Mosby Company, St. Louis, 1937. Cloth, \$3.50.

In this volume of 302 pages the author has given a very complete brief discussion of the diseases of the intestinal tract. He has taken much information from the current literature and combined it with his practical experience as a physician and teacher. The book is divided into four parts as follows: General consideration, under which he discusses diagnostic methods, therapeutic methods, organic and functional inferiority and gastro-intestinal allergy and food sensitiveness; two, diseases of the intestinal tract, under which he discusses the diseases of each anatomical part of the gastro-intestinal tract separately; three, diseases due to industrial parasites, and four, digestive symptoms in extra-digestive diseases. He gives the various means of manipulation and laboratory tests used in diagnosis. Under each disease he gives a definition, pathology, symptoms, diagnosis and treatment. There are forty very helpful illustrations practically all of which are original.

This book should be very helpful both to students and physicians for quick reference.

LOCAL ANESTHESIA, THE TECHNIC OF, by Arthur E. Hertzler, A.M., M.D., Ph.D., LL.D., F.A.C.S. Professor of Surgery in the University of Kansas; Surgeon to the Halstead Hospital, Halstead, Kansas; to St. Luke's Hospital and St. Mary's Hospital, Kansas City, Missouri; and to the Providence Hospital, Kansas City, Missouri. Sixth Edition. Illustrated. The C. V. Mosby Company, St. Louis, 1937, Cloth, \$5.00.

This latest edition by Dr. Hertzler still maintains all the good points of the previous editions. It is so arranged that it is very handy for the practitioner to reveal the technic without scanning the whole work. The chapters on intravenous and spinal anesthesia cover this phase of anesthesia admirably. The wide use of anesthesia at this time has done away with the demand for local anesthesia during operations below the costal margin. However, there are many patients where it is not advisable to use spinal anesthesia and it is necessary for the surgeon to be prepared to make any pre-operative procedures under local anesthesia.

This is an excellent text and the subject is thoroughly and systematically discussed.

SENILE CATARACT, Methods of Operating, by W. A. Fisher, M.D., F.A.C.S., Chicago. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Formerly Professor of Clinical Ophthalmology, University of Illinois; Formerly Surgeon, Illinois Charitable Eye and Ear Infirmary; Formerly President, Chicago Ophthalmological Society; Member, Illinois State Medical Society; Chicago Medical Society; Fellow, American Medical Association; Fellow, American College Surgeons; Fellow of the Academy of Ophthalmology and Oto-

Laryngology. With Chapters by Prof. E. Fuchs, Vienna, Austria; Prof. I. Barraquer, Barcelona, Spain; Dr. H. T. Holland, Shikarpur, Sind, India; Dr. John Wesley Wright, Columbus, Ohio; Dr. A. Van Lint, Brussels, Belgium. 150 Pages and 181 Illustrations. The H. G. Adair Prtg. Co., Chicago, 1937.

This is an excellent small book of 150 pages.

The author presents in detail his own method of intracapsular extraction as well as the methods of Arnold Knapp, Elschinig and Homer Smith in brief.

The chapter giving a method of acquiring technic by operating on kittens' eyes is especially well written and the chapter by Oscar B. Nugent on the fitting of correcting lenses after cataract extraction is instructive.

The book is well illustrated.

OPHTHALMOSCOPY, RETINOSCOPY AND REFRACTION With New Chapter on Orthoptics, by W. A. Fisher, M.D., F.A.C.S., Chicago, Ill. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Formerly Professor of Clinical Ophthalmology, University of Illinois; Formerly Surgeon, Illinois Charitable Eye and Ear Infirmary; Formerly President, Chicago Ophthalmological Society; Member, Illinois State Medical Society; Chicago Medical Society; Chicago Ophthalmological Society; American Medical Association; Fellow, American College of Surgeons; Fellow of the Academy of Ophthalmology and Oto-Laryngology. Fourth Revised Edition. With 240 Illustrations, including 24 Colored Plates. Cloth, \$2.00 Postpaid. The H. G. Adair Prtg. Co., Chicago, 1937.

This small book of 202 pages deals expertly with the problems of ophthalmoscopy, retinoscopy and orthoptics. But the reviewer feels that the one short paragraph of five lines, devoted to the cross-cylinder, is inadequate for the discussion of so important an instrument. The book is well illustrated.

OPERATIVE SURGERY. By J. Shelton Horsley, M.D., and Isaac A. Bigger, M.D. With Contributions by C. C. Coleman, M.D., John S. Horsley, Jr., M.D., Austin L. Dodson, M.D., and Donald M. Faulkner, M.D., in Two Volumes. Fourth Edition. Illustrated by Miss Helel Lorraine, St. Louis. The C. V. Mosby Company, 1937. Cloth, \$15.00.

The two-book edition of this well known work is almost completely rewritten, with more than five hundred new illustrations, and many new operative procedures, which have stood the test of time. Whereas his other editions dealt with the author's personal experience in specialized fields of surgery, together with general surgery, in the Fourth Edition Dr. Horsley has had Dr. Isaac Bigger, Professor of Surgery at the Medical College of Virginia as co-author of the book, writing the chapters on surgery of the neck, thorax, breast, hernia, nervous system, and extremities, while Dr. C. C. Coleman, Professor of Neurological Surgery and Dr. A. I. Dodson, Professor of Urological Surgery, both of the Medical College of Virginia, handled their respective branches. Dr. John S. Horsley, Jr., writes on plastic surgery; Dr. Guy W. Horsley on proctology, and Dr. Donald M. Faulkner covers orthopedic surgery.

The very high standard of surgical thought and procedure of previous editions is maintained, and the busy surgeon will welcome and often refer to this Operative Surgery.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

The Prognosis in Papilloedema. Gordon Holmes, F.R.S. The British Journal of Ophthalmology, July, 1937.

Holmes says the reason for this subject is that he frequently finds that the presence of papilloedema is regarded as an immediate danger to vision. The communication has only to do with papilloedema associated with increased intracranial pressure and does not take up the question of its diagnosis.

Papilloedema is universally now recognized as an oedema of the nerve head in which, for a time at least, there is little structural damage or functional disturbance of the nervous elements. However, when the oedema subsides into atrophy, these may be strangled and destroyed by overgrowth of interstitial tissue.

Since increase in intracranial pressure is the active agent in producing papilloedema, then the relief or reduction of the increased pressure will save the affected part, if done before secondary changes have developed in the disc. This is the cause, many times, for the demand for an early operation.

But suppose the pathology is an extensive infiltrating tumour of the glioma type, its complete removal would probably reduce the length and utility of life. Delay may be advisable because of lack of localizing symptoms, risk of life, physical disablement and other reasons.

The author challenges the statement in a recent neurology text book, "every long standing case of papilloedema inevitably leads to blindness." He says the questions that one must answer are: What will happen if pressure is not relieved at once? and How long can we delay without endangering the patient's vision? To answer these each case must be considered on its own merits.

In the presence of considerable congestion and swelling of the optic discs there may be no deterioration of sight for months and rarely in years. On the other hand a few weeks may play havoc with the vital visual organ.

Gowers wrote many years ago, "now and then a neuritis rapidly subsides although the disease progresses." The author states he has personally followed such cases as when the disease subsided, no operation was done and the vision was unimpaired.

Some of the indications mentioned by the author for the relief of intracranial pressure to preserve the sight are:

1. A rapidly developing congestion and swelling of the optic discs.
2. Swelling of five or more dioptries.
3. Intense congestion, as shown by great en-

gorgement of the retinal veins and early extensive hemorrhages on the surface of the swollen discs.

4. The early appearance of exudates in the form of large soft greyish patches on the swollen discs or macular fan.
5. A narrowing or decrease in calibre of the arteries in the swollen disc and its neighborhood. White lines along the vessels appear later.
6. Peripheral contraction of the visual fields.
7. Transient loss of sight.

There is a discussion as to sequelae after the cause has been removed.

COMMENT: This is quite an interesting original article that recapitulates the observations of a highly competent man.

Differential Diagnosis of Suppurative Meningitis Caused by Paranasal Sinus Disease With Some Suggested Prophylactic Measures. Charles J. Imperatori, New York. The Laryngoscope, May, 1937.

The three pathways of infection to the meninges and their frequency of occurrence are: Venous blood stream, forty-eight per cent; direct extension through bone, forty-three per cent; olfactory perineural sheaths, nine per cent. However, twenty-two cases cited, eight occurred by extension by way of the osseous veins of the frontal, ethmoid or sphenoid sinuses. Great care is advised in the diagnosis of the cause of bacterial meningitis. The face (erysipelas, cellulitis of the face, pustules within the nose, and orbital abscess), pharynx and middle ear are possible primary foci. Indicative of meningeal infection following a nasal operation is persistent boring headache; high temperature, pulse and respiration (pulse and respiration sometimes slow and irregular); vomiting; photophobia; irritability and restlessness; neurological signs; cervical stiffness, Kernig and Brudzinski.

Aids to the differential diagnosis mentioned are spinal fluid examination, physical-chemical-bacteriological; blood counts and blood cultures; x-ray examination (in his experience, not of much value).

In his differential diagnosis he considers otitis media, mastoiditis, labyrinthitis, petrositis, injuries of the head, acute poliomyelitis, syphilis and malignant disease.

Three groups are listed under suggested prophylaxis against suppurative meningitis:

1. Unavoidable causes—Congenital defects of bony case of brain, nasal glioma, fulminating sinusitis during influenzal epidemic, accidental injuries and complications following pneumonia, bronchiectasis, etc., via emboli.
2. Partially avoidable causes—Surgical trauma from loss of orientation during sinus operation, bungling operative methods on septum or middle turbinate (especially cauterization of the middle turbinate), failure to provide sinus drainage (incomplete operation), pro-

longed nasal packings and unsuccessful attempts to remove a foreign body from nose.

3. Avoidable causes—Sluder and Ballenger intranasal ablation en masse of the ethmoid sinuses, intranasal frontal sinus operations (external route preferable), so-called "through operating" in presence of acute fulminating frontal or ethmoidal involvement.

The use of sprays in prevention of poliomyelitis is mentioned incidentally. U. S. Public Health recommends one-half per cent alum and one-half per cent picric acid solution. One per cent zinc chloride solution is advocated by others.

There is a short bibliography.

X-ray Therapy in Malignant Disease of the Throat. **J. Struthers Fulton, Glasgow. The Journal of Laryngology and Otology, July, 1937.**

The three possible methods of treatment of malignant disease of the throat to be considered are complete surgical removal, implantation of radium and external radiation.

Surgically there is to be considered the risk as well as the probable partial permanent physical disability. The implantation of radium in throat cases is usually technically difficult. If the implantation is correctly done on the primary lesion, this does not take care of the usual accompanying or following gland problem. The external radiation takes care of both the initial lesion as well as the glands and does not interfere permanently with the function of the part treated.

The relative merits of the use of x-ray and radium are discussed. "Holtheusen has shown that if x-rays and radium be used at the same intensity an exactly similar biological response is produced." The best results with either is when the treatment is protracted and carried out at a low intensity.

Lower intensities of x-ray do much less skin damage—this fact makes it possible to give the throat lesion an adequate dose, which was not possible with the older methods.

Continuous application of radiation at low intensity would be ideal treatment. This is manifestly difficult but as much as six hours per day have been given nicely per patient.

There is the possibility of damage which could be done to the blood if sufficient dosage is given with the radium collar. There is a discussion on the disadvantages of this method.

The lead-lined cone in the use of the x-ray eliminates the possibility of damage to the blood. With x-ray when two diametrically opposite fields of adequate area to take care of the primary and lymph drainage area are used, an ideal thorough and through homogeneity is obtained.

The author is of the opinion that the physical distribution of the therapy is of more importance than the continuous radiation.

Except Saturdays and Sundays, the patient receives daily treatment for a period of six weeks. Both areas are treated each time, two hours in the morning and two hours in the afternoon. The skin reaction begins about the third week and reaches its maximum about the fifth week. Lanoline is used as a dressing. Difficulty in swallowing is experienced after the fifth week for about two weeks. Unless the patient is debilitated he is treated as an outdoor case.

The two sequelae mentioned are: Dryness of the mouth (due to radiation of the salivary glands), which may persist up to one year; submental oedema, which subsides after months.

Cholesteatoma of the Frontal Sinus. George M. Coates, M.D., Philadelphia. Archives of Otolaryngology, July, 1937.

Ewing says a cholesteatoma is a tumor composed of lamellated waxy or scaly material enclosed in a wall of stratified squamous cells. He also said that cholesteatoma as well as a true dermoid may appear in or near the sella turcica.

Etiological theories of Ewing, Bostroem, McFarland, etc., are mentioned briefly. Bostroem thinks that all cholesteatoma arise from embryonal epidermal inclusion. Hartley reported a frontal sinus cholesteatoma of traumatic origin. Virchow thought a metaplasia of connective tissue brought about the condition. The author says that otologically "it has long been thought that the cholesteatoma is caused by ingrowth of epidermis from the external auditory canal through a marginal perforation of the drum to line the infected spaces of the tympanum and mastoid, replacing diseased mucous membrane. Desquamation takes place—cholesterol is deposited—bone absorption or necrosis—the mass infected by bacteria—a foul odor of decomposition, etc."

The author reports this case because of its rarity and its probable origin. The pathologists of this case confirmed the lesion as a true cholesteatoma and suggested as to origin, a possible embryonal inclusion, traumatic inclusion or metaplasia. Analogous to the metaplasia of tumors in other parts of the body, this could probably have occurred from the irritation of a chronic infection. If this were true, however, then it seems that this phenomena would have been more frequently observed and reported.

Since the history was negative and there was no evidence of a scar, traumatic origin here was ruled out. There was a history of a sledding accident thirty-five years previous.

The fetal inclusion theory accounts for cholesteatoma within the cranial cavity and the author leans toward this theory to explain the formation of the lesion in his case report.

The differentiation of rhinitis caseosa and cholesteatoma has caused some confusion. Some question if there are two such diseases. The differential points are discussed.

The case reported is that of a man, age fifty-one years. He started with a head cold. A retrobulbar abscess was drained of about thirty cc. of yellow green pus which cultured staphylococcus albus—haemolyticus. X-ray showed loss of the floor of the frontal sinus. At operation a whitish-gray mass was removed. Photographs are shown of the patient, post-operative, two, five and twenty-one days. His recovery following operation was uneventful.

Notes of a similar case of Dr. Fletcher Woodward's are given.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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The Urinary Iodine in Thyroid Disease. By George M. Curtis and Italo D. Puppel, Columbus, Ohio. The Western Journal of Surgery, Obstetrics and Gynecology, August, 1937, Page 417.

"The development of modern biochemical micro-methods has permitted analyses of the minute amounts of iodine constantly present in the blood

and urine. During the past thirteen years extensive studies have consequently been made concerning the urinary excretion of iodine.

"Iodine is a normal constituent of human urine. The amount excreted during a twenty-four hour period (daily) on a nonconstant food regimen varies greatly, and would appear to be largely dependent upon the inconstant intake of food iodine. When the food regimen is maintained constant the urinary excretion is more uniform. The age of the individual may prove to be a factor. In normal individuals the urinary iodine is derived to a lesser extent from the body metabolism.

"In central Ohio the average daily urinary excretion of iodine ranges from thirty-six to seventy-eight micrograms and averages fifty-one micrograms. The urinary excretion of iodine is decreased in those regions where goiter is endemic and increased in those which are relatively goiter-free. The normal urinary excretion of iodine of the inhabitants of five non-goitrous regions averaged four times that of the inhabitants of five goitrous regions. These observations have a definite bearing upon iodine deficiency as related to the incidence of goiter.

"The form in which iodine is excreted in the urine has not been definitely determined. It does not appear to be in the form of thyrosine, but rather in a more simple compound. Solutions of this problem are important and should be further investigated.

"The majority of patients with hyperthyroidism have an increased loss of iodine in the urine. It is suspected, although not certain, that a part of this originates in an increased breakdown of the high iodine-containing thyroid hormone. Other tissue iodine may play a part.

Subsequent to thyroidectomy for various forms of goiter there follows an increased loss of iodine in the urine in uniodized patients. A similar loss ensues following total thyroidectomy. Both are accompanied by an increase in the blood iodine. Moreover, a similar loss follows other major surgical operations such as thoracoplasty, radical mastectomy and spinal fusion. It appears that a part of this post-operative loss of iodine in the urine is from tissues.

"The urinary iodine is of similar significance in thyroid disease as the urinary sugar in diseases of the pancreatic islets or the urinary calcium in diseases of the parathyroids." LeRoy D. Long.

Morbidity Following Goiter Operations. By Arthur S. McQuillan, M.D., and Lester Breidenback, M.D., New York. *Annals of Surgery*, August, 1937, Page 169.

Eight hundred and three patients were examined from six months to fourteen years after operation.

"This evidence (data collected in connection with the personal examination of patients) was considered from a symptomatic, anatomic and economic point of view as occupational and social restitution, and a check on history and signs of stability, pulse, blood pressure, basal metabolic rate, weight, exophthalmic measurements and laryngoscopic examination. With an otherwise normal check up, a plus or minus fifteen basal metabolic was allowed." Anatomic cord impairment, regardless of phonation, a poor scar and recurrence of hypertrophy placed the patient in the unsatisfactory class.

Incidentally, the authors say, "toxic goiter left alone and untreated will kill."

Post-operative morbidity is considered under the following headings:

1. Post-operative Thyrotoxicosis. This complication appears suddenly as an overwhelming toxemia that resembles cocaine poisoning. The theory is advanced that it might be due, partially, to the removal of too much of the gland, and it is suggested that the administration of thyroid substance might be of service in its treatment, this suggestion being based on the probability of a sugar starvation of the cells of the central nervous system, "and the fact that thyroid substance has been found to raise blood sugar." Thyrotoxicosis was encountered twenty-seven times in the primary hyperthyroid group and three times in the toxic nodular group.

2. Recurrences. The authors believe that an adequate operation in which not over one-fourth of the gland on each side is permitted to remain is an important procedure looking to the prevention of recurrence. It is indicated that most recurrences are manifest from six months to two years from the time of the operation, and this is spoken of as the "period of delicate balance." The conclusion is that the mode of life of the patient during this period should be one of comparative quiet. In this connection there is a reference to "a small group of patients among those given an excellent rating in Graves type, who at intervals exhibited temporary recurrences of symptoms, such as palpitation, fatigue, tremor, nervousness and digestive disturbances," the disturbances being usually transient, and disappearing on elimination of the cause, such as "emotional and physical strain."

3. Persistence of Signs and Symptoms. There were twenty-eight such patients in the series of eight hundred three, seven being accounted for by incomplete operations, one because of diabetes, and five because of inadequate removal of thyroid tissue.

4. Persistent Exophthalmos. There were forty-two patients in this group. Three of the cases of exophthalmos "intensified following operation." It is suggested that "diminished cell oxidation to a point of cell asphyxia is a possibility in this persistent and intensified post-operative exophthalmos."

5. Cardiac Involvement. There were forty-three instances in the group of eight hundred three patients. Referring to the general belief that cardiac involvement is most often found in connection with nodular goiter, the authors say that in their experience the reverse is true, the percentage being higher in the Graves type. Cardiac fibrillation is the most frequent manifestation.

6. Parathyroid Tetany. In the group reported there were two cases, one of them after a sub-total thyroidectomy for Graves' disease, the other after a radical removal of the gland for carcinoma. The tetany was temporary in both cases.

7. Myxedema and Hypothyroidism. There was but one patient who had true post-operative myxedema. An interesting circumstance was that the patient had been poisoned by illuminating gas a few weeks before operation and had pneumonia following the operation. Eight other patients required temporary thyroid feeding. In the case of these patients there were fatigue, exhaustion, pallor, stiff and painful muscles, choky neck, a moderate fall in metabolism. It is indicated that a mild degree of post-operative hypothyroidism is not undesirable, but it is not always possible to determine accurately just how much of the gland tissue to remove in order to secure it "inasmuch as the quality of thyroid tissue (or its energy capacity) differs in different individuals."

8. Pneumonia and Tracheitis. In the group of eight hundred three patients there was post-operative pneumonia in nine and there were five deaths.

The statement is made, "A tracheitis and a laryngitis of varying intensity occur commonly for the first day or two and may be mistaken for the hoarseness which is the result of nerve injury. It is undoubtedly due to the results of tracheal congestion incident to operative manipulation causing pressure. This may progress to a bronchitis and then to a bronchopneumonia."

9. Embolism. There were six cases with five deaths. Two were cerebral, three pulmonary, and one of the right brachial artery. Four of them were in the Graves type and two in the nodular type. "The case of the right brachial embolism happened on the seventh post-operative day. There was a complete return of circulation in this artery at the end of two months."

10. Tracheal Collapse. "There were five cases of deformities and partial tracheal collapse, but no case of true collapse due to erosion of cartilages as is reported." There is a reference to the case of a thirteen year old child where, after the removal of a multiple nodular goiter, there was partial collapse of the trachea. "The airway was sufficient until the second day, when post-operative congestion of the mucous membrane and collection of mucus caused serious tracheal obstruction. Posterior extension of the head by allowing the patient's head to drop back over the back of a Gatch bed resulted in extension of the trachea and thereby a widening of its lumen." It is suggested that during operation the trachea may become jammed, and that it might be possible to relieve the situation by incising a degenerative cystic goiter.

11. Recurrent Laryngeal Nerve Injury. "Reports of injury to this nerve are meager and unsatisfactory." It is the apparent impression of the authors that nerve injuries may be overlooked because, if unilateral, the defect may be hidden by the compensatory function of the opposite cord. Attention is directed to some rare situations in which there is impairment of the vocal cords developing from a few weeks to several months after the operation, due to cicatricial inclusion. It is indicated, too, that there may be temporary functional disturbances a few days after the operation due to hemorrhage or oedema, the symptoms usually disappearing within two weeks.

12. Hemorrhage. Careful technic is the most important means of preventing it. Hemorrhage may result from the slipping of a hemostat or ligature. It is safer to ligate soon after the application of hemostats because of the danger of damage to the vessels by pulling. It is safer, too, to use transfixion in connection with the ligations. "Occasionally one encounters thyroid tissue, its vessels having the consistency of wet cardboard. Hemostats do not hold but actually sever the vessels. Suturing muscles to such thyroid tissue often solves the difficulty."

13. Drainage, Infection, Suture Material, Scars. Looking to the prevention of mediastinal infection, septicemia, and paresis of a recurrent laryngeal due to pressure from hemorrhage, drainage is advocated for from twelve to forty-eight hours. There were twelve instances of infection, local in character and easily controlled. In the opinion of the authors the ease of control was due very largely to the employment of drainage. It was observed that the most serious cases of infection were in those patients where silk had been employed as suture and ligature material. The authors advise that catgut be employed. There were eight unsatisfactory scars due, in the opinion of the authors, to an operative incision lower than one and one-half inches above the superior border of the manubrium with the head in extension; to the lack of

protection of the skin edges from trauma of tissue; to failure to suture the platysma.

COMMENTS

It is interesting to note that Naffziger has demonstrated that persistent exophthalmos is due to hypertrophy of intra-ocular muscles, for the relief of which he has devised an intra-cranial operation.

LeRoy D. Long.

Iodine Metabolism, Normal and Abnormal. Its Relation to the Reticulo-Endothelial System. By Joseph L. DeCoursey, M.D., Cincinnati, Ohio. *The Western Journal of Surgery, Obstetrics and Gynecology*, August, 1937, Page 432.

"Evidence has been presented to show that blood iodine is not always increased in cases of hyperthyroidism, and this would indicate that it is not the thyroid alone that controls iodine metabolism and regulates the level of blood iodine.

"The liver plays an important role in iodine metabolism, and in conditions where the liver is damaged—as in cholecystitis and liver disease—blood iodine is increased and reaches a higher level than in hyperthyroidism.

"Recent animal experiments are discussed which confirm these findings and indicate that it is the reticulo-endothelial system, especially the reticulo-endothelial cells of the liver—the Kupffer cells—that primarily control iodine metabolism. The thyroid gland acts as a stimulator of the RES rather than directly on iodine metabolism.

"These findings indicate that the determination of the iodine content of the blood is valuable as a test of liver function rather than of thyroid function, and may be so used clinically in surgical cases where liver damage is to be feared."

LeRoy D. Long.

Parametrial Fixation Operation for Uterine Prolapse—Technic and Review of Two Hundred Fifty-four Cases. By Udall J. Salmon, M.D., C.M., New York, N. Y. *American Journal of Obstetrics and Gynecology*, July, 1937, Page 58, No. 1, Volume 34.

This is a report on the use of a modification of the Fathergill-Manchester operation in the Gynecological Service of the Mount Sinai Hospital since introduced by Frank in 1932.

The technic is well demonstrated but will not be out-lined here because Frank's original article was abstracted for this section and the technic of the Fathergill-Manchester operation has been published in many journals since Shaw's visit to this country.

Enumeration of advantages of the operation would also be repetition.

Of their entire series of two hundred fifty-four cases there was one recurrence. "In fifteen cases there was considerable sagging of the anterior vaginal wall, but even in these the cervical stump and fornices remained high up on straining. In two of this group there was a recurrence of the cystocele which required a secondary anterior colporrhaphy; one case required a secondary repair for recurrence of the rectocele."

Eight patients complained of dyspareunia. "In all but two of these the dyspareunia grew progressively less bothersome after the first year."

As regards the subjective (functional) results, these were considered very good except in the small group of eight cases that had dyspareunia, the one case of recurrent prolapse, and the two

cases with recurrent cystocele, and the one with recurrent rectocele."

In this series there were two pregnancies with uneventful deliveries and no sign of recurrence of the prolapse.

COMMENT

The results reported are those of operations done in the last five years. Naturally many patients have been followed an insufficient time to warrant their inclusion in final statistics as to the results of this operation. However, this is an exceedingly good report and it is not probable that the later patients will have results different from those upon whom operation was done four and five years ago.

This report is surely a substantiation of the most commonly accepted principles involved in the repair of uterine prolapse, which form the foundation of the Fothergill-Manchester operation.

Wendell Long.

Sensory Pathways of the Ovarian Plexus—An Experimental Study. By John S. Labate, M.D., and Samuel R. M. Reynolds, Ph.D., Brooklyn, N. Y. *American Journal of Obstetrics and Gynecology*, July 1937, Page 1, No. 1, Vol. 34.

It was the purpose of this study to determine the segmental distribution of the sensory pathways from the ovarian plexus to the central nervous system. Cats were used as experimental animals. The authors "utilized the increase in blood pressure and respiratory movements resulting from strong faradic stimulation of various components of the ovarian plexus and the absence of such effects when essential pathways have been severed." A total of fifty observations were made.

Stimulation on the ovarian vessel, its branches and the fallopian tube produced typical sensory response. Stimulation elsewhere within the broad ligament and the ligament anchoring the ovary to the uterus caused no response. "When the ovarian vessels are severed, stimulation of the distal cut end produces no reflex response, but stimulation of the central end immediately causes a rise in the blood pressure and an increase in the rate and depth of respiration."

The central sensory pathways of the ovarian plexus were investigated in the following manner: "These were determined by stimulation peripherally about the ovarian vessels after systematically destroying the sympathetic trunk at various levels." "These observations show that not until the fourth lumbar sympathetic ganglion is removed are the sensory responses from the ovarian plexus affected or abolished." This demonstrates the fact that the sensory components of the ovarian plexus enter the main sympathetic trunk above the level of the fifth lumbar ganglion.

"When the third lumbar ganglion on this side was removed, however, the remainder of the trunk, above and below including L4, being intact, the vascular and respiratory reflex effects were absent."

"This group of experiments proves that the sensory fibers from the ovarian plexus travel along the ovarian vessels and enter the fourth lumbar sympathetic ganglion. These fibers then run upward through the main sympathetic trunk beyond the third lumbar ganglion without passing to the spinal cord through the same communicants at these levels."

The sensory fibers from the uterus probably travel by way of the superior hypogastric plexus.

A group of experiments are reported to prove that sensory fibers from the ovarian plexus do not go

by way of the superior hypogastric plexus, the resection of which is advocated for pelvic pain. "Stimulation of the peripheral cut end of the ovarian plexus does not produce any reflex responses on blood pressure and respiratory movements, even though the tissues are intact from the cut ovarian artery downward." The lower portion of the aorta, the inferior mesenteric artery, the common iliac arteries and the interiliac zone were completely denuded, leaving the sympathetic trunk intact. Despite this thorough periarterial sympathectomy, stimulation of the central cut end of the ovarian vessels caused marked rise in blood pressure and respiratory movements.

The authors have been unable to trace the sensory fibers into the spinal cord because, in accordance with this experiment, they enter the spinal cord above the level of the diaphragm. Operative experiments above the diaphragm would affect the sensory responses employed in the remainder of this work beneath the diaphragm.

COMMENT

It has been thought that afferent sensory fibers from the ovary travel along the course of the ovarian vessels. This is a good piece of work in proof.

The authors state that this is the first substantiating evidence pointing to the level that ovarian afferents enter the main sympathetic trunk.

They have shown evidence that ovarian afferent components have no connection by the way of the hypogastric plexus.

This experimental effort must be viewed with favor from not only the purely scientific standpoint but from the practical as well. The facts given here may do much in aiding the selection of patients to undergo pelvic sympathectomies, in determining the type and extent of operation and in giving a proper prognosis in individual patients. At best, the treatment of pelvic pain is a trying experience requiring the most meticulous care and study if one is to have maximum retention of function and relief of the pain. Any additional knowledge such as this becomes invaluable in practical clinical application when well correlated with other facts.

The application of the results of these experiments to intelligent local anesthesia is readily to be seen. Local anesthesia is very adaptable to the pelvis and improvements may well make it the anesthesia of universal choice. Wendell Long.

PLASTIC SURGERY

Edited by

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Treatment of Keloids. W. J. Hoffman, New York. *Archives of Physical Therapy, X-ray and Radium*. March, 1937.

The author suggests radiation following the excision of keloids. Treatment is to be started approximately nine to ten days after the surgery. In this way recurrence of growth is avoided. He also points out that sutures should be without tension.

COMMENT: I have observed some very striking results in the treatment of keloids by the above method, especially is this true in cases of elevated rope-like or roughened tumor masses, keloidal in character. The entire mass is excised surgically and if practical skin edges are sutured. However, in

a great many cases it is impossible to bring the defect together without tension. In these cases it is wise to graft the area and then after a period of nine to ten days begin x-ray treatments.

Some keloids yield to ray treatment without surgery. However, when the mass is rather large and heavy, a combination of surgery and radiation gives the most satisfactory results.

INTERNAL MEDICINE

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By HUGH JETER, M.D., F.A.C.P., A.S.C.P.

Syndrome of Hypochromic Anemia, Achlorhydria and Atrophic Gastritis Gastroscopic Studies, With Case Reports. Lester M. Morrison, M.D., William A. Swalm, M.D., and Chevalier L. Jackson, M.D., Philadelphia. *The Journal of the American Medical Association*, Vol. 109, No. 2, July, 1937.

This is a report with extremely interesting data tabulated reviewing four hundred gastroscopies performed on patients who had hypochromic anemia and achlorhydria. The clinical picture, examination of blood, gastric analysis and gastroscopic appearances are recorded in a manner to facilitate the study and coordination of these findings. The gastric pathology is described as two main forms of chronic atrophic gastritis—the diffuse and the segmented—which occur in three stages of involvement, as demonstrated pathologically by Moutier; namely, (1) thinning out of the mucosa (early involvement), (2) effacement of the gastric rugae (moderately advanced involvement) and (3) arborization of the underlying and submucosal vessels (well advanced involvement).

The authors have attempted to discourage the tendency in the past few years to consider "idiopathic hypochromic anemia" as a distinct entity. It is their belief that this disease is a partial expression of a syndrome and not a disease entity and that it is yet an unknown metabolic disturbance in which gastritis plays a dominating role. They desire that this report be considered only preliminary and express the hope that further studies of a group of patients with hypochromic anemia, achlorhydria and hypochlorhydria with atrophic gastritis and its possibility in the genesis of carcinoma of the stomach and esophagus, pernicious anemia and combined sclerosis of the cord and that these cases as well as others will be studied during ensuing years with particular reference to the development of these diseases.

COMMENT

This is an extremely interesting report in that a highly experienced bronchoscopist has added a description of appearances of the gastric mucosa in each individual case. This should prove to be a great aid in the study of the so-called idiopathic hypochromic anemia and is a new method of approach in connection with the study of pernicious anemia as well as other types of anemia wherein the stomach plays a predominating role.

Normoglycemic Glycosuria Differentiated From Other Benign Glycosurias and Diabetes Mellitus. Florence H. Smith, S.B., and Kendrick A. Smith, S.M., Chicago. *Archives of Internal Medicine*, Vol. 60, No. 1, July, 1937.

The authors prefer the term "normoglycemic glycosuria" rather than the term renal diabetes which has been almost universally used in medical litera-

ture. Interesting case reports are given and with them complete data, much of which is given in the form of charts to illustrate the points which are made in the body of the manuscript. The following criteria for diagnosis are given:

1. The reducing substance in the urine must be identified as dextrose. Pentosuria, lactosuria, fructosuria and galactosuria may occur; but unless dextrose is found in abnormal amounts without hyperglycemia, renal glycosuria is not present.

2. Glycosuria must occur without hyperglycemia and may be constant or may occur only during the postprandial period as a cyclic glycosuria.

3. The level of the sugar in the blood during fasting and the results of a standard dextrose tolerance test must be normal. This, of course, takes into consideration the effect of emotion or illness, which may greatly increase the blood sugar.

4. Symptoms suggestive of diabetes mellitus must be absent or explainable by some process such as hyperthyroidism, which may cause loss of weight, weakness and hunger.

5. There should be, ideally, no family history of diabetes mellitus. The history of glycosuria in the family, however, often aids in making the correct diagnosis, as the familial characteristic is common in renal glycosuria.

6. There should be little or no relation between the intake and the excretion of sugar. This holds true for the case in which there is marked and constant glycosuria, but when the glycosuria is cyclic the excretion of sugar will follow to some extent the intake of sugar and the rate of absorption.

7. The rate of utilization of sugar should be normal. However, as has been pointed out by Rabinowitch and Paullin, persons with mild diabetes often show no changes in the respiratory quotient which would aid in differentiating them from nondiabetic persons.

8. The patient must not subsequently show diabetes. Rabinowitch gave no time limit, but Joslin has fixed it at a maximum of three years from the time the diagnosis of renal glycosuria is made. It, of course, cannot be made too long, for every person has a chance of about one per cent that the disease will develop.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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Ruptures and Tears of Muscles and Tendons. H. Earle Conwell and R. H. Alldredge. *American Journal of Surgery*, Vol. XXXV, No. 22, 1937.

The authors call attention to the observation that injuries to the muscles and tendons have previously been considered rare, but, undoubtedly, many cases have been overlooked due to incomplete study and examination and the likelihood of diagnosis as sprain or bursitis, when the actual condition is a tearing of muscles and tendons.

The etiological group of such injuries is usually classified according to Gilcreest, due primarily to senility, pathological changes, physiological predisposition, occupational injuries, fatigue, and trauma.

In the order of frequency, the most common sites of injury are the muscles of the calf, the extensors of the leg, the biceps tendon and the Achilles tendon. Many of these cases can be treated conservatively if the lesion is not too serious to allow heal-

ing to take place, without permanent dysfunction. Operative procedure is indicated in the cases in which gross changes are found. Treatment should consist of immobilization for a period of two to three weeks in the cases of partial rupture, and for a longer period in the operative cases, depending upon extent and location of the lesion, the healing muscle being placed entirely at rest following operative repair.

The authors report eleven cases. The etiological factors and the diagnostic methods are well described, and the article is illustrated to show the characteristics of the more common varieties. The injuries occur more frequently in middle-aged individuals in whom the weakening of muscles and ligaments, associated with stress and strain, causes the injury. They can best be diagnosed by careful examination, with particular reference to localized pain, loss of function or painful function, or a defect in the muscle or tendon, with or without ecchymosis.

Acute Suppurative Tenosynovitis of the Flexor Tendon Sheaths of the Hand. A Review of One Hundred and Twenty-five Cases. Robert S. Grinnel. *Annals of Surgery*, Vol. CV, No. 97, January, 1937.

The author points out that the four routes of infection of the tendon sheath are: (1) Puncture wound (primary), (2) extension from a neighboring infection (secondary), (3) blood stream, (4) lymphatic spread. None of the cases in this series were due to lymphatic or blood-stream infection, except seven gonococcus infections which are discussed separately.

There are sixty-seven primary and fifty-eight secondary cases. All gave a history of trauma. In forty-seven per cent the wound was near or in the flexor crease. The distal crease alone was involved in forty-one cases. The next most common site was the distal closed space (twenty-three cases). The right hand was involved twice as often as the left, and the digits were affected in the order named: second, third, first, fourth, and fifth.

Early diagnosis is essential. The average delay in operation, because of error in diagnosis, was one day in the primary group and four days or more in the secondary group. Diagnosis is based on tenderness localized to the region of the sheath, flexion deformity in the digit, exquisite tenderness on extension of the distal phalanx, and a wound of entry. In the secondary group, diagnosis is more difficult. Infection outside the sheath confuses the picture, and it is difficult to determine whether or not the sheath has been invaded when a localized portion of the sheath only is involved.

End results, based on a follow-up of sixteen months, were discouraging. Over one-third of all cases fell into Group I (bad) and nearly two-thirds belonged in Groups II and III (fair, good). Only one-sixth of the patients regained approximately full function.

Gross sloughing of the tendons in whole or in part occurred in fifty-two per cent of the cases.

The streptococcus hemolyticus was the infecting organism in thirty-six per cent of the cases and the staphylococcus in thirty-one per cent. The remaining cases were not cultured, or mixed infections were found. The results were better in the staphylococcus infections. Tendon slough was about equal in the two types of infection, but much higher in the mixed infection.

The radial bursa was involved thirteen times, the ulna eight times, and both were affected in ten instances. In all but one case the spread was

from the radial bursa. In only one case was the digital sheath of the thumb involved without extension to the radial bursa. The thenar space was involved in fifteen cases; the midpalmar, in four; the forearm, in nine; and the wrist joint, in one. Extension from the volar to the dorsal surface occurred ten times. There was one death, and the prognosis was definitely poorer with advancing age. There were three arm and eight finger amputations. Osteomyelitis occurred in thirty-eight per cent of the cases; the middle phalanx was most often involved.

The average time from operation to complete healing was fifty-three days. Delay before operation and incomplete drainage are probably the most important causes of poor results.

TREATMENT: Incisions were usually multiple, short, anterolateral, bilateral or unilateral, over the proximal and middle closed digital spaces, and a single midline incision over the sheath in the palm. The latter is recommended whenever the digital sheath is involved. The bursae above the wrist were usually drained by lateral incisions, as advocated by Kanavel. Digital incisions, lateral to anterior vessels, were not used, as interference with sheath and tendon nutrition was feared. Truncated finger flaps, as suggested by Auchincloss, one for the proximal and one for the middle closed spaces. The distal end is cut along the flexion crease and the sides are cut obliquely to avoid the anterior vessels and nerves, including all tissues down to the tendon sheath, and extending nearly to the next proximal crease. This method affords better drainage. Sterile wet dressings of saline or boric solution post-operatively give better results than hot soaks.

In the seven cases of hematogenous gonococcal tenosynovitis, healing occurred in twenty days. There was no sloughing of the tendons, and the results were almost uniformly good.

Calcium Ortho-Iodoxybenzoate in the Treatment of Arthritis

Cohen (Clin. Med. and Surg., 44:341, August, 1937), reports on a series of one hundred twenty-five cases of classic atrophic arthritis where calcium ortho-iodoxybenzoate was the only drug therapy used. With those patients receiving therapy over a considerable period, five per cent were regarded as cured; forty-three per cent very much improved; and twenty-two per cent somewhat improved. This represents a total of seventy per cent who received definite benefit from the drug. The dose employed was usually from two to four times that heretofore recommended and varied between three and six gms. daily. While this increase resulted in a greater incidence of intolerance, it is advocated on the basis of greater therapeutic efficiency. Neither age nor sex appeared to be of significance as regards the efficacy of calcium ortho-iodoxybenzoate (Oxo-ate "B") and no particular type of atrophic arthritis was benefitted more than another. Complete hematological examinations and laboratory tests indicated that the drug has no effect on the red or white blood cells, heart or kidneys even when taken over long periods of time. It is concluded, therefore, that calcium ortho-iodoxybenzoate may be safely used in large doses and is a valuable adjunct in the treatment of atrophic arthritis.

Sixteen distinguished guest lecturers are on the program for the Oklahoma City Clinical Society's eighth annual clinical conference, November 1, 2, 3, 4. Doctors are invited to attend, and will find the course invaluable.

The Effect of Benzedrine Sulfate on the Rat

Ehrich and Krumbhaar (Ann. Int. Med., 10:1874, June, 1937), report on the functional and structural changes produced by Benzedrine Sulfate (benzyl methyl carbinamine sulfate, S.K.F.) when injected into rats in varying doses over varying periods of time. The minimum lethal dose decreased with the weight (age) of the animal, varying between thirty-five mg./kg. for the older and two hundred mg./kg. in the younger rats. This would be from one hundred to one thousand times per kilo the usual therapeutic dose in man. A tolerance to repeated doses was observed. With large sub-lethal doses excitement, mydriasis, erythrocytosis, leukocytosis and retardation of growth were effects commonly produced. The greatest non-toxic dose (i. e. that which failed to produce transient variations) appeared to be about ten to fifty times per kilo the usual therapeutic dose in man. Animals which died following high, toxic doses showed various changes in the lungs, spleen, liver and kidneys. But repeated sublethal doses failed to produce any detectable lesions in rats. It was concluded, therefore, that there should be a considerable margin of safety in the proper therapeutic use of Benzedrine Sulfate.

Clinical Experiences With Newer Analeptics

This study by Charles L. Burstein and E. A. Roventine, Department of Anesthesia, Bellevue Hospital (Curr. Researches in Anes. and Analg., 16:151, May-June, 1937), is concerned with the analeptics, metrazol, picrotoxin, and coramine, which act on the vasomotor and respiratory centers as to their effects in safeguarding patients against depression of sedative or hypnotic drugs used in anesthesia.

Metrazol was administered in doses of one and one-half to two cc. intravenously and repeated in five minutes if necessary. With intramuscular injection the dose was the same; the reaction similar but less rapid. Coramine was given in doses of five cc. repeated at five to ten minute intervals until twenty-five cc. were used. The observations

on picrotoxin have not permitted an accurate standardization of the dosage. It was given in three mgm. doses except in cases of intoxication from the barbiturates. However, it appears from these cases that six mgm. doses may wisely be used.

In morphine poisoning, ether or paraldehyde depression, cyclopropane anesthesia, metrazol was clinically most effective. Respiratory activity usually became more normal. The pulse and blood pressure were often improved and a more rapid return to consciousness was usually promoted. The action of metrazol in tribromethanol depression was not as prolonged as that from coramine, and picrotoxin was the least serviceable.

The most interesting observations were made in connection with the use of these analeptics in depression or intoxication from various barbiturates. Although not in keeping with experimental evidence, the response following metrazol was more satisfactory than from picrotoxin. First, the respiratory rate and volume exchange were improved and succeeding doses frequently awakened the patient. Coramine also stimulated the patient in some instances but with less effect than with metrazol and picrotoxin. In two instances coramine appeared to increase the duration of narcosis and retarded recovery. Convulsions occurred in one patient following picrotoxin. This patient had received evipal previously and forty-five minutes later three mgm. of picrotoxin were given intramuscularly. Generalized tremors developed in three minutes, lasting about fifteen minutes. A satisfactory technique is to give one mgm. of picrotoxin per minute until an effect is secured. Picrotoxin may be added to an infusion of five per cent glucose, given with endotracheal intubation.

While the value of analeptics in hypnotic drug poisoning has not been completely established, a clinical improvement follows their use. In general, metrazol is the most satisfactory of the analeptics studied. The author believes that artificial respiration should not be omitted in any case where the medullary centers are depressed.

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The "Regimented Rationale" in the Treatment of Rheumatic Disease*

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OKLAHOMA CITY

Chronic arthritis through the ages has been a persistent tormentor of human beings. Likewise, those seeking to control the disease through medical science have found the true cause and cure an enigma.

The initial evidence of its early intrusion of the mechanical structures of the body often exhibited through surprise attacks of "cricks," "catches" and "aches," may make the victim a subject of derision for his misfortune and even may be looked on with but passing concern by the person thus afflicted, when once he has obtained relief from his discomfort. He may little realize that the repetition of such signs indicates the subtle invasion of his body with a disease that will gradually cripple and permanently incapacitate him. When once the pain is persistent and the structures obviously involved, however, the arthritic is quick to try any remedy that promises relief. He is difficult to satisfy, and is a true subject for the charlatan and patent medicine vendor. Thus it is that the painful restrictions of the characteristic symptoms of the chronic rheumatic have brought into existence more cure panaceas than any other disease. Wave after wave of promising cures have swept through the ages of time only to be discarded as perhaps helpful but not specific. Those searching for relief have been steamed, rubbed, adjusted and manipu-

lated; dosed with foul smelling mineral waters, saturated with pain relief drugs, injected with intravenous medications and relieved of their teeth, tonsils and other accessories, only to find that as time rolled on the physical impairment progressed, oftentimes to complete miserable disability. Hopes were greatly raised fifty years ago when Billington established the importance of focal infection, but even though thorough removal of all possible foci is acknowledged as an essential phase of the treatment, the results in most instances are only a temporary halting of the progress of the invading disease. "Once a rheumatic, always a rheumatic," is not far from a true saying.

What is the answer? Certainly it would be Utopia if a specific remedy could be established, but none yet has been proved. Still the rheumatic patient must be treated. What we need to realize is that the nature of the disease is constitutionally insidious and its progress persistently disabling so that to accomplish permanent therapeutic results the clinical complexity as a systemic whole must be the criterion in contra-distinction to the delusive satisfaction of removing teeth and tonsils or prescribing symptom relieving drugs. To adopt the more thorough program it will be necessary to regiment all the diagnostic and therapeutic influences of medical research. The attack must be consolidated to the broadside with an armamentarium of therapeutic weapons fully outfitted

*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 12, 1937.

with information and assistance from the laboratory, the bacteriologist, the radiologist, the physiologist, the chemist, the specialist clinician, the dietitian and the orthopedist. Information thus obtained, however, must be evaluated and co-ordinated for use of the family physician or the one who is to maintain continuous control over the patient.

When such a comprehensive regime of management has replaced the poorly planned, haphazard symptom relieving methods of temporary effectiveness and the rheumatic patient as well as the general public is taught the reality of procrastination in seeking competent diagnosis and is awakened to the fickleness of trying out undirected cures then will there be a realization that the chronic arthritic can exert a normal span of life within his limits of disability just as the patient with tuberculosis or diabetes has found he can do. It seems appropriate to designate such a system of treatment the "Regimented Rationale."

OUTLINE OF REGIMENTED RATIONALE

In outline, the "regimented rationale" would be somewhat as follows:

1. Recognition on the part of the physician that the disease must be classified and treated according to etiological diagnosis.
2. A detailed systematic investigation of each particular case, using all facilities of clinical and laboratory procedures available.
3. Consultation with specialists, such as dentistry, otolaryngology, proctology and others.
4. Thorough correlation and management of the case through cooperation between the one who actively manages the case and those who have brought about the information as the result of clinical and laboratory research.
5. Details of treatment:
 - a. Medical relief of pain and immediate symptoms.
 - b. correction of constitutional disturbances:
 1. Metabolic disturbances.

2. Endocrine influences.
3. Vitamine deficiencies.
4. Gall bladder, intestinal and other systemic factors.
5. Allergy phenomena.
- c. Removal of focal infections.
- d. Specific therapy; vaccines.
- e. Orthopedic measures.
- f. Physcial therapy.
- g. Drugs.

Such a program is successful provided it is carried out thoroughly, but any partial application is bound to fail.

MEDICAL RELIEF OF PAIN

The morale of the rheumatic is often greatly broken and it is important to establish renewed confidence through early relief of painful symptoms. There are many useful drugs for this purpose; the most popular one being the salicylates in one form or another. A definite rest routine is outlined. Factors of cold, fatigue, too much exercise and deleterious habits are corrected. General supportive treatment is given especially to correct anemia, nervousness or any systemic debility that may be present.

DIAGNOSIS AND ETIOLOGICAL CLASSIFICATION

The recognized classifications of chronic arthritis should, of course, be understood and used; but when preparing to undertake treatment of a given case, there are two general categories in which to place the case from the etiological standpoint. First, does it have an acute, subacute or chronic infectious aspect; or, second, is it more of a non-infectious nature in which such factors as vitamin, endocrine, allergic, metabolic or traumatic disturbances render an important influence?

LABORATORY PROCEDURES

Considerable laboratory information is essential for the etiological diagnosis and must be obtained in each case. A complete blood count to determine the amount of anemia and leukocytosis; a sedimentation time to indicate infection; a Schilling hemogram to determine activity of infection; a streptococcic agglutination test to determine streptococcic sensitivity; a Wassermann to rule out syphilis. A basal me-

tabolism rate is essential; a sugar tolerance test for carbohydrate metabolism; blood chemistry in cases suspicious of gout; a leukopenic index for bacterial or other hypersensitivity; complement fixation tests; cultures from teeth, tonsils, sinuses, prostate and other infected areas; x-rays of joints for diagnostic aid and other tests of diagnostic benefit indicated in particular symptoms syndromes.

CONSULTATION WITH SPECIALISTS

In making a thorough study of the case, many diagnostic angles arise which involve the special fields of medicine. All diagnostic and therapeutic consultations should be directed and coordinated by the physician in charge of the case. The dentist, for instance, may make recommendations regarding extraction of teeth, or the throat specialist may condemn the tonsils, but it is not wise to place too great a dependence on such procedures or to be too hasty or too radical. No disease requires a closer study of all the related systemic factors in etiology than that of chronic arthritis.

CORRELATION AND MANAGEMENT

After the laboratory results are compiled and all features developed in the diagnosis are drawn together, the correlation and management is begun. Recommendations are listed and plans laid to carry them out to the best advantage.

CORRECTION OF CONSTITUTIONAL DISTURBANCES

It is of prime importance that arthritis be considered a systemic disease. Focal infection may be the precipitating causative agent but it is not necessarily the primary etiological factor. A thorough history of symptoms and personal habits dating from childhood is essential in evaluating the distinctive features of the case.

Faulty Metabolism: An abnormal basal metabolic rate is often indicative of systemic depreciation relative to endocrine balance. There may be a delayed glucose removal from the blood stream which increases joint pain. There may be difficult menses with increased rheumatic pain several days before and during the menstrual period. Nervousness and loss of appetite may result from upset calcium-phosphorus metabolism. Especial attention

should be given the underweight and overweight.

Endocrine Influences: Thyroid and other endocrine disturbances are frequently observed in the chronic arthritic. Many thyroid deficient cases do not present a picture of thyroid derangement *per se*, but give the picture of ovarian dysfunction. The results of estrin therapy in these cases emphasize the need for further investigation of estrin as an agent for relief of symptoms; first in women with a sharp increase in joint symptoms in the premenstrual periods, and second in women of the menopausal group in whom the onset of joint pains comes with the onset of menopause. This latter group of patients will be discussed later.

Estrin, given to this first group of patients, very frequently causes severe flare-ups of the rheumatic process, but it is of interest to note that none of these patients received benefit from progesterone in the amounts used, although larger doses might prove efficacious. Some of the patients in the first group received complete relief from symptoms with the administration of estrin. However, the treatment is purely substitutional and the original symptoms return when the treatment is stopped. Other supportive treatment is necessary.

Vitamine Deficiencies: There are no laboratory methods available for this determination but very often symptoms are encountered which indicate abnormal growth, abscess, xerophthalmia and night blindness, lowered resistance to infections, defective teeth, deranged lachrymal secretion, etc., associated with arthritis. Patients with these symptoms often show marked improvement under Vitamine A therapy.

Vitamine B1 and B2 are important in rheumatic disease. Symptoms of impaired growth, weakness and fatigue, loss of appetite, disturbances in the metabolism of carbohydrates, low glucose tolerance, hyperglycemia, vague nervous system involvements, polyneuritis, indigestion, constipation, colitis, edema, dermatitis and thickening of the skin, soreness and inflammation of the tongue and mouth, etc., should make one suspect vitamine B1 and B2 deficiency. Recently, I have had several cases respond spectacularly to this

therapy. Treatment should be begun by subcutaneous injection of vitamine B1. Therapy B1 and B2 by mouth should follow. A diet high in vitamine B should also be utilized. All toxins such as alcohol and heavy metals should be deleted.

A patient with petechii, pale and sallow complexion, severe dental caries and loosening and shedding of teeth with spongy, bleeding gums, bone decalcification, etc., should receive heavy vitamine C therapy. These cases have bleeding into the joints and muscles, as well as in the skin and gums, and they showed marked pain and swelling in joints and limbs. Spontaneous fractures are seen in severe cases. The results in these cases are almost dramatic.

Vitamine D has been used extensively for arthritis therapy and possibly has been overdone. Unquestionably, small doses are of benefit in all cases. Large doses in acute cases may prove disastrous. Our attempt to use large doses (100,000 units per day) almost invariably caused increased pain and heat even in chronic cases. However, vitamine D deficiencies must not be overlooked because many patients recover on this therapy. They usually show other evidence of osteomalacia along with a negative calcium and phosphorus retention balance. This type of case is frequently seen in post-partum women who nurse their babies and do not take ample calcium and vitamine D.

Gastro-Intestinal Tract and Diet: Careful attention to the gastro-intestinal tract will usually create an improvement of function in all organs. Much is to be said on this phase of the treatment of arthritis. Faulty digestion, gall bladder affections, constipation and many other factors have an important bearing in many cases. A strict dietary regime will lessen the load and a curtailment of carbohydrates is often indicated.

Allergy Phenomena: The question of allergy in arthritis is not new, but comparably little is known about this angle. Recently, food allergy as a causative agent has been recognized and more cases are reported each day where some specific food serves as the precipitating factor. Striking results are gained when the specific foods are removed and we have found such foods as grapefruit, prunes and cof-

fee to be offending antigens. As a rule, the increased pain, swelling and redness comes on one and one-half to two hours following the ingestion of the food and lasts for about three days. The leukopenic index and intradermal skin tests are used as the laboratory test for sensitivity. More evidence is being produced to show that bacterial infection can produce the rheumatic syndrome by acting as an allergic antigen.

Specific Therapy—Vaccine: Specific therapy although not entirely satisfactory at the present time, it becoming more dependable due to the diligent efforts of those interested in laboratory research on arthritis. Vaccine methods vary greatly, yet, there has been developed a newer aspect especially in regard to the allergic or sensitivity conception of inducing increased resistance to toxic organisms in contradistinction to the Erlich's immunologic conception of combating infections. Infinitesimal doses of especially prepared vaccines are used to produce a characteristic reaction of a euphoric state of well-being rather than large doses which produce shock and febrile reactions.

The dilution of the vaccine is extremely important. It is usually safe to start with 0.5 cc. of a dilution of .000,000,01 organisms per cc. and increase this dose until the desired reaction is reached. The injections should be given every three or four days and the dosage increased or decreased according to the patient's reaction. Very often the dosage is advanced greatly but it is safer to start with the above amount. This type of therapy is more clearly indicated in patients showing increased sedimentation rates, Schilling shift to the left, positive streptococcus agglutination and a positive leukopenic index. It might be said that this group could be classified as chronic streptococcic disease, just as tuberculosis with all its side phenomena is a chronic tubercular disease.

Vaccine therapy, given purely with the idea of desensitization of the bacterial hypersensitivity in a series of one hundred patients with the above findings caused eighty-eight to become pain free and the sedimentation time returned to normal in two months' therapy. General supportive treatment was also instituted. Two of the

above group quit on the grounds that they thought they were receiving aspirin.

High titre antigen reactions are not well understood, but it is obvious that the antigen must be fairly specific. There is some overlapping in the streptococcic series and the vaccine must be prepared from several strains. The one most successful in our hands has been one from cultures of the arthrotropic series of Cecil, Nichols and Stainsby; the Q-33 strain of Homer Swift; the typical strain of Walter Crowe; and five strains isolated in our laboratories. These are mixed in equal proportion, killed with 0.3 per cent phenol solution and proper dilutions are then made. Frequent testing for sterility must be made with the stock kept fresh.

ORTHOPEDIC MEASURES

One of the important features of a regimented management of a rheumatic condition is the orthopedic consideration. As many of the joint changes will be permanent, and ankylosis is likely to occur, it is extremely important to guard correct anatomical position of joints. Correct splinting with casts, corsets and braces, timely manipulation, restoration of joint motion and the amount of weight bearing, require judgment and experience, and mistakes are likely to result in crippling deformities. Acutely inflamed joints require splinting and protection, but as soon as the acute inflammation subsides, motion should be established. Weight-bearing joints should be protected over a long period and full function should be resumed cautiously. Orthopedic consultation frequently is necessary.

Surgical restoration of ankylosed joints may be accomplished but only after all inflammation and rheumatic activity is quiescent. Surgery any place in the body frequently causes a generalized flare-up of the rheumatic process.

PHYSICAL THERAPY

Physical therapy affords, as a whole, the oldest means of attack on the rheumatic problem. The use of physical therapy is far from being appreciated and up until relatively recent times has been in the hands of masseurs, and various cults. The popularity of the various resorts and

springs tells us that we are overlooking an important phase in medicine.

The influence and use of heat together with massage and medical gymnastics form the most valuable measure in the realm of physical therapy in relation to arthritis. Such treatment should be given by a competent physical therapy technician under the direct supervision of the physician who is managing the case.

Fever therapy is one special method of heat therapy that has proved to be a specific in gonorrheal arthritis. A temperature of from 104° F. to 106° F. is maintained for three hours or so, and from two to four treatments are necessary.

Massage, hydrotherapy, colonic irrigations, exercises and various high frequency currents may have very definite contraindications. Too many patients with lowered blood pressure, impaired heart action and general debility are subjected to weakening, severe hot baths without medical supervision. Many acute joints are made worse by the indiscriminate use of infra red and various short wave treatments.

Special mention should be made of the administration of acetyl choline derivatives by iontophoresis or galvanism. Again medical supervision is essential to prevent accidents from lowered blood pressure. Very encouraging results can be had in chronic cases.

The therapeutic value of physical therapy can be summed up by listing the definite responses:

1. Prevention of atrophy, correction of deformity, and restoration of a better muscle tone.
2. Improvement of local and general circulation and metabolism.
3. Prevention of ankylosis and restoration of joint motion.

DRUGS

It is impossible to mention here all the measures used to combat rheumatic disease, but perhaps mention should be made of the use of colloidal sulphur, colloidal gold and other heavy salts, chalmogra oil, bee sting toxin, non-specific proteins, and liver extract. Favorable reports have been

made in all the above, but indications for them have been few.

SUMMARY

The object of these summarized remarks on chronic arthritis is to point out the necessity of regimenting all the combating forces at one's command if one is to treat the disease at all and to warn that it is a disease with the course of a lifetime; so that even though a case may become symptom free and all activity temporarily quieted, the disease should be considered in an arrested state and not as cured. The term "Regimented Rationale" has been coined to characterize the all inclusive attitude toward treatment which is preferred to the more or less experimental haphazard use of drugs and overestimated singular measures of relief.

In general, the most reliable form of therapy falls in three groups: rest, systemic correction, vitamins and high dilution desensitizing vaccines. It is to be remembered that something can be done for the rheumatic and these patients are always extremely grateful for any relief that is given them.

* * *

DISCUSSION

Dr. H. D. Moor, Oklahoma City:

Dr. Ishmael's paper is one of wide general interest to all practitioners of medicine and surgery. The results he has obtained thus far are certainly encouraging. His method of treating these unfortunate people should command a careful study by all of us.

The use of streptococcic vaccine by Dr. Ishmael is of particular interest to me. There are many types of vaccines on the market today for many different conditions and used in several different ways. There are, however, only a few used in connection with human disease of unquestioned value, such as typhoid, rabies, smallpox, diphtheria, and scarlet fever vaccines. I believe we can sum up the status of the rest of them in two words: encouraging but unconvincing. We give vaccines in order to prevent a specific disease or to cure a disease already established. The vaccine acts as an antigen causing a reaction in the body cells that

results in the production of specific antibodies. These antibodies constitute in part at least the internal defensive mechanism against the specific disease. Vaccines may also act non-specifically as for example vaccines given for the purpose of inducing a non-specific protein reaction as demonstrated by the use of typhoid vaccine in the treatment of general paresis. The allergists use vaccines for the purpose of desensitizing their patients.

The idea that the reactions of the joint tissues in chronic rheumatoid arthritis is due to a hypersensitivity of these tissues to streptococci or their toxic products is not new. I do not know who first advanced this hypothesis, however, it is frequently encountered in the literature. I have especially in mind Dr. Charles W. Wainwright's article published in the *Journal of the American Medical Association* for November 3, 1934, entitled "*The Treatment of Chronic Rheumatoid Arthritis with Streptococcus Vaccine*," which states that the relation of streptococci and streptococcic vaccine to chronic rheumatoid arthritis remains in an uncertain and far from established position. He declared that if a relationship exists it might do so in one of three ways:

1. The joint lesion may be the result of the localization of streptococci circulating in the blood stream.
2. The joint lesion may be due to toxins liberated from some focus of streptococcus infection elsewhere in the body.
3. The joint reaction may be allergic in nature and represent hypersensitivity of the joint tissues to streptococci resulting from low grade infections or from the persistence of foci of infection in the body.

Dr. Wainwright made a careful bacteriologic study of the blood in ninety-one cases having rheumatoid arthritis with the following results:

One case positive for streptococcus viridans.

Four cases positive for diphtheroid bacilli.

Four cases positive for staphylococci.

Three cases positive for gram positive bacilli.

The other seventy-nine were negative.

During the winter and spring of 1930 the bacteriology department of the State University Medical School carried out a bacteriologic study of twenty-one cases of rheumatoid arthritis. Our blood cultures were negative in nineteen cases. We secured from one a non-hemolytic streptococci and from another a gram positive strepto-bacillus. Throat cultures from these patients all yielded a positive culture for streptococci except three. From these three we obtained only one throat culture each and it was negative for streptococci.

We failed to obtain a positive stool culture for streptococci or staphylococci in all twenty-one patients. We did skin tests on only three of these patients. Two gave a positive and one a negative result.

Cecil and his co-workers report relatively high percentages of positive blood cultures for streptococci in arthritis, however many other workers' reports agree with Dr. Wainwright's. The lack of uniformity in connection with blood cultures is striking. The results of agglutination tests and the results of skin tests are much more uniform. Wainwright found the sera of forty-six or ninety per cent of fifty-one cases of rheumatoid arthritis to possess agglutins for hemolytic streptococci. He also found all of fifty-five cases of rheumatoid arthritis to whom he gave skin tests using one or more strains of streptococci to react positively. The results of other workers are in close agreement with this. The following percentages found by various investigators illustrate this situation:

***BLOOD CULTURES FROM PATIENTS WITH RHEUMATOID ARTHRITIS**

Cecil, Nicholls, Stainsby—	
Approximately.	
70% Positive Blood Cultures for Streptococci.	
Klugh—	
70% Positive Blood Cultures for Streptococci.	
Gray and Gowen—	
58% Positive Blood Cultures for Streptococci.	
Wetherby and Clawson—	
50% Positive Blood Cultures for Streptococci.	
Average—	
62% Positive Blood Cultures for Streptococci.	

* * *

*Dawson, Omstead, Boots—	
2.5% Positive Blood Cultures for Streptococci.	
Nye and Waxelbaum—	
All Cultures Negative for Streptococci.	

Lichtman and Gross—

9% Positive Blood Cultures for Streptococci.

Wainwright—

0.9% Positive Blood Cultures for Streptococci.

Average—

3.1% Positive Blood Cultures for Streptococci.

*Data obtained from Dr. Wainwright's article published in the Journal of the American Medical Association, November 3, 1934.

***SERUM AGGLUTININS FOR HEMOLYTIC STREPTOCOCCI IN THE BLOOD OF PATIENTS WITH RHEUMATOID ARTHRITIS**

Dawson, Omstead, Boots	67% Positive
Nicholls, Stainsby	100% Positive
Keefer, Myers, Oppel	54.5% Positive
Wainwright	90% Positive
Average	77.8% Positive

* * *

***POSITIVE SKIN REACTIONS TO INTRADERMAL INJECTIONS OF STREPTOCOCCI IN RHEUMATOID ARTHRITIS**

Wainwright	100% Positive
Birkhaug	47% Positive
Myers, Keefer, Oppel	70% Positive
Wetherby, Clawson	91.8% Positive
Average	77.2% Positive

*Data obtained from Dr. Wainwright's article published in the Journal of the American Medical Association, November 3, 1934.

Dr. Wainwright's results with the sedimentation test agree with those of Dr. Ismael's. Twenty-one of twenty-eight cases of rheumatoid arthritis to whom Dr. Wainwright gave streptococcus vaccine intravenously showed improvement.

We may still use the words encouraging but unconvincing. However, I am of the opinion that it is highly probable that the value of vaccine in the treatment of rheumatoid arthritis will be established beyond a question of a doubt. I am sure we all wish Dr. Ishmael godspeed in this important work he is doing.

Dr. Wayne M. Hull, Oklahoma City:

Physicians are slowly realizing that no single mode of management can be resorted to in the treatment of rheumatic disease nor in arresting or eliminating the deformities which are prone to develop when the disease follows a progressive course. We are no longer justified in the viewpoint of yesterday in assuming rheumatic disease to be an incurable condition. It is true that many cases may not amend themselves to known methods of treatment, yet improvement in most cases can be expected.

Dr. Ishmael's efforts and results are most convincingly encouraging. I have

had the occasion to observe his work constantly for almost a year and in that time have seen many cases brought through the Out Patient Clinic at University Hospital on stretchers, in wheel chairs, on crutches and with canes and it has been a pleasant surprise to see many of these same individuals returning in a month or two for their treatment unaided, nearly all of these with considerable relief of pain and return of joint movement. The great improvement seen in many of these cases has been almost unbelievable.

The importance of a very thorough survey of each individual case is to be emphasized. A very careful case history and most important, a thorough physical examination must be made in every case. The laboratory studies are of considerable significance in estimating the status of any case of rheumatic disease. It is to be observed from what he has said that there are several of these tests and most of them should be done on every case. These tests are not beyond the reach of the practitioner, the expense is not great and they are not tests requiring unusual technical ability. In any case the value of laboratory studies must not be under-estimated or overlooked and here it may prove a very useful guide in the management and a measure of the patient's reaction to the treatment. To me the blood studies including the Schilling differential, sedimentation, agglutination tests, leukopenic index, B. M. R. and carbohydrate metabolism seem indicated in every new case. Frequent repetition of any that are not normal is to be encouraged, for any degree of improvement may be shown in many cases earlier by laboratory studies than by clinical observations. It is to be recalled that most cases of rheumatic disease are precipitated by infection in which one or more types of organisms from a number of possible strains of streptococci predominate. We must keep in mind that most strains of the rheumatic group are so low in virulence that they cannot act upon the phagocytic leukocytes in the usual manner in producing antibodies.

Swift has shown that the intracutaneous inoculation, especially in the presence of a focal lesion produces an allergic condition, but when an intravenous injection is made with streptococci, immunity with a

moderate high titre develops instead of tissue hypersensitivity. This indicates that before any degree of immunity can be expected the patient must be desensitized of his bacterial hypersensitivity. This point is probably very frequently overlooked when vaccine therapy in this disease is considered.

The relation of bacterial invasion to certain endocrine disturbances as pellagra, scurvy, rickets, etc., has been well established and the use of vitamins in the treatment of rheumatic disease occupies a position of unquestioned value in the management of many of these cases as shown by Dr. Ishmael's work. It is certainly easy to overlook this when one's attention is so well occupied on clearing up foci from numerous sources or on many of the other considerations to be taken into account with sufferers of this disease. It is to be hoped that clinicians will be more patient with their management of rheumatic disease than many of us have in the past. Dr. Ishmael's statement that recognition by the physician that the disease covers a course of a "lifetime" is certainly to be amplified. It occurs to me that victims of this disease should be made to realize the significance of this, also to prevent their seeking treatment elsewhere before the clinician's efforts have had time to produce the improvement he has set out to obtain. The "Regimented Rationale" management in the treatment of rheumatic disease certainly appears to be a welcome development in this field of medicine.

USE OF "BENZEDRINE INHALER" FOR CHILDREN

Vollmer (Arch. Otolaryng., 26:91, July, 1937) treated with "Benzedrine Inhaler" a series of 75 children exhibiting rhinological symptoms due to infection or allergy. The ages varied from one to twelve years.

No difficulty of administration was encountered with either infants or older children. Clinical observation made fifteen minutes after use of the Inhaler showed marked shrinkage of the nasal mucosa resulting in decongestion of the nasal passages and relief from "stiffness." All the cases of acute rhinopharyngitis and sinusitis were benefited. Those with otitis media received relief from nasal symptoms although it did not alter the course of the disease. This was also true of two cases of asthma. No results were obtained with two cases of epistaxis.

In no case were any ill effects noted, such as headache, sleeplessness, restlessness or gastrointestinal disturbance. It is thus concluded that "Benzedrine Inhaler" can be satisfactorily employed with young children for the relief of nasal symptoms due to infectious or allergic edema.

The Value of the Localizing Reactions in Atrophic or Chronic Infectious Arthritis; Non-specific Type*

E. GOLDFAIN, M.D.
OKLAHOMA CITY

The localizing type of reaction in the antigen therapy of atrophic arthritis is interesting as a phase of immunogenic response on the part of highly sensitized tissue cells surrounding a focus of infection.

The characteristics of this reaction consist of pain and swelling or induration at the site of a focus of infection. It will appear when the antigen is injected parenterally either intravenously or subcutaneously. The symptoms usually manifest themselves within twelve to twenty-four hours. Duration of the reaction will be as short as twelve hours. It may persist as long as seventy-two hours.

The pain may be sharp or throbbing. The swelling will be subjective or objective. By subjective is meant a feeling of fullness and tension at the site of the focus of infection.

How can one explain this condition? A study of immunology leads us to the chapter of local protein anaphylaxis. Here is described the "Arthrus Phenomenon." The symptoms of this phenomenon and the localizing reaction are identical.

At present it is generally accepted that hypersensitiveness or anaphylaxis can only take place when the antigen meets sessile antibody receptors attached to the tissue cells.

An explanation of the localizing reaction then could be that the circulating antigen meets with these sessile antibody receptors on the tissue cells about the focus of infection. The result is the reaction. All that is necessary is that the tissue cells have sufficient free receptors and that the dose of antigen be large enough.

The lapse of time between the parenteral injection of antigen and the appearance of the reaction can be explained on the basis

of time necessary for the splitting of the antigen to take place and for union with the cell receptors.

From a therapeutic standpoint, in the treatment of arthritis, the localizing reaction, when it occurs, is happily of value. For when it is observed it frequently points to a focus of infection that is chronic, latent, and which often may be overlooked.

A number of cases could be quoted. Two are being set forth below. They illustrate in an admirable way the phenomenon.



FIG. NO. 1

Note area of rarefaction, medial root, second molar. Peridental membrane continuity broken about apex of root.

Case I Patient C. P. Age 38

LOCKED APICAL DENTAL INFECTION

This case began with pain in the right hip joint area. Examination revealed: Definite pain located in region of right hip joint. Internal and external rotation right thigh caused pain. Medial pressure right greater trochanter caused pain deep in femur head area. Tension on fibrous structures of right groin caused the patient to experience definite pain.

Dental roentgenograms revealed apical infection, left lower second molar.

See illustration, Fig. No. I.

Diagnosis: Atrophic Arthritis.

On March 6, 1933, patient was given the

*Read before Section of General Medicine at the Annual Meeting of Oklahoma State Medical Association, May 11, 1935.

saline antigen extract of 100 organisms polyvalent streptococci.

The only reaction consisted of pain about the lower left second molar, which was definitely diseased. The pain appeared within sixteen hours; lasted 24 hours and required aspirin for relief and comfort. The tooth was devitalized and had not bothered her previously.

Type of Reaction: Localizing or arthrus.

* * *

Case II. Patient S. J. L. Age 35

Examination revealed rigidity of lumbar spine with spasm of fibromuscular structures of lower back.

Teeth: Those that were devitalized had been removed. Purulent material could be expressed from underneath gum edges.

X-Ray: Extensive sepsis was present in supporting structures of all lower teeth. Definite pockets around virtually all lowers.

See illustration, Fig. No. II.

Diagnosis: Fibromyositis, subacute. Hyperthrophic Spondylitis.

On February 8, 1932, saline extracts of twenty-two thousand organisms polyvalent autogenous streptococcus vaccine were given subcutaneously.

On February 10, 1932, patient developed aching and neuralgic like pains about all his teeth. The whole right side of his face was swollen. This began within 48 hours.

Type of Reaction: Localizing or arthrus.

CONCLUSIONS

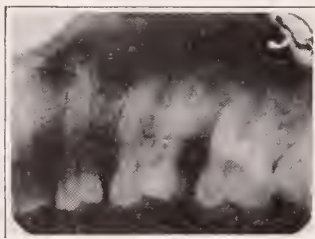
1. A localizing reaction in each of two cases of rheumatic diseases has been set forth.

2. The parenteral dose of antigen has been so small that the role of non-specific protein reaction is in our opinion eliminated.
3. When this reaction occurs, it gives definite information enabling one to eliminate a source of infection.
4. A warning may be sounded that too large a dose can be harmful by stirring up metastatic foci in the fibro-skeletal structures as well as primary to too great a degree thereby accentuating the damage rather than improving it.
5. It tends to prove that these cases may be placed in the same category as tuberculosis, in which condition it is definitely conceded that an extremely high state of hypersensitivity to the tuberculin antigen exists.

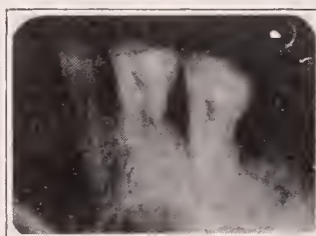
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DISCUSSION

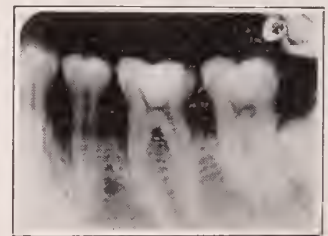
Dr. Ray M. Balyeat, Oklahoma City: I would like to discuss an interesting thing which happened to me about one year ago. A doctor brought his father-in-law in and said that he was having rather severe arthritis and he had the chronic infectious type of osteo-arthritis. I did not think very much about it. There was no swelling but lots of pain in the joints and wrists. After getting rid of the infectious material his wrist got well. Since that time I have seen four or five cases. We have found that in getting rid of the infectious material in the bronchial tubes it lessened the pain in the joints. Personally I still felt that the infection in the bronchial tubes had nothing to do with the original source of infection in the joint, but it is just like a patient who has a chronic arthritis of most



(A) RIGHT



(B) RIGHT



(C) LEFT

FIG. NO. II.

Note marked pockets about second right lower molar; alveolar recession and pockets about other teeth.

any type, severe constipation or acute sore throat will increase the pain in the joints. I think what happened was that where the infection was in the bronchial tubes that 50% to 80% toxemia was causing the pain.

Dr. A. Ray Wiley, Tulsa: I would like to ask a few questions. We will assume you had the rheumatic type of arthritis, do you have any way of telling whether it is entirely rheumatic or entirely hypertrophic or any of the cases of the mixed type? Assume that your hypertrophic type is due entirely to metabolic disturbance and not the infectious type. Is there any question of doing any harm with vaccines in the metabolic type. If you have time I would like to hear you discuss some of these questions and also the preparation of your vaccine in individual and specific cases.

Dr. E. D. McBride, Oklahoma City: From the orthopedic standpoint I have been interested in arthritis for some sixteen years in this town. I do not know of any other problem that is so confusing and difficult to handle as is the arthritis problem. I feel that as doctors and medical men I tell my classes in medical school that we are feeding the quacks and off-brand medical practitioners because of our negligency in this classification. The dentists are treating as much arthritis as the M. D.'s. They are pulling teeth and treating arthritis at the same time. The habit of having pain and pulling teeth is an incomplete process. They come to us with focal infection, say the tonsils or the teeth, and a few other things that may appear on the surface as focal infection. It seems to me in the chronic type of patient it is our duty to be as thorough as we can and dive into the case and do all there is to do. We listen too much to the superficial attacks of these focal infections and do not get down to bed rock and so many cases slip away. There is a way to meet arthritis. We have felt typhoid therapy and some other different ways of treating patients as good methods, but apparently those things are almost useless unless you understand your case. Arthritis cases are the hardest type of cases to understand. If we get into this thing as we should there is a tremendous field for doing a lot of good. These people that have aches and

pains today may be in the wheel chair in the future. Nobody sitting in a wheel chair at 60 or 70 with deformities from arthritis thought he would be there because of some little ache and pain 20 years ago. I feel something as a missionary continually promoting this idea of treating and taking an interest in these cases and doing something for them. It is surprising what you can do if you try.

Dr. E. Goldfain, Oklahoma City: Toxic absorption is like clearing up of any source of septic absorption and will help the ability of the individual to stay on top in the rheumatic condition we have. As to individual diagnosis, I did not go into that angle in my paper. The individual diagnosis of atrophic or rheumatic arthritis differs from hypertrophic arthritis or osteoarthritis in that atrophic arthritis usually is prior to or in the early thirties. It may begin in the first few years of life. Some begin with the child. On the other hand hypertrophic arthritis begins in patients of 40 years or more and is more common in women than men. The x-ray gives us very definite information in that the atrophic arthritis shows hyperplasia or proliferation of the synovial membrane and periarticular tissue and goes on to the final stage with absorption of the articular cartilage with bony ankylosis. The x-ray in the hypertrophic type shows degeneration of the cartilage. There is no proliferation nor swelling and pain. There is more evidence of systemic toxemia in the hypertrophic arthritis than there is in the atrophic arthritis. A very interesting test is being used, the sedimentation test. Sedimentation tests will show accurately the presence of active rigidity of sedimentation. In the hypertrophic arthritis the sedimentation test runs practically normal. The Schilling test is of value because in the atrophic arthritis it veers to the left 10% or more while in hypertrophic arthritis it is practically within normal limits. We see quite a bit of anemia in atrophic arthritis, the patient is undernourished, underweight, tall, slender type while in hypertrophic arthritis the patient is well nourished and seldom shows anemia and usually is of stocky build. Dietary condition and correction of focal infection is the line used. It is a matter of readjusting activities of the individual,

getting him used to the idea of the chronic condition he is going to have the rest of his life, removing the focal infection, building up his general system and reducing strain on the joints. In hypertrophic arthritis one thing will be of value, always tell the patient that it is an unusual thing that ankylosis does not take place. Artrophic arthritis cases are those who are going to be crippled and bed fast if you do not watch out. Dr. McBride has the proper attitude towards the problem. From the standpoint of the orthopedic man he has the same feeling about the matter if he has to deal with therapy. However, the orthopedic man has an important function in treating these cases by subluxation and restoring to them mechanical mobility quite often.

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ECTOPIC PREGNANCY*

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Any implantation of the ovum outside the uterine cavity is known as an extra-uterine or ectopic pregnancy. This may occur anywhere along the fallopian tube, from the isthmus to the fimbria, or in the part of the tube which passes through the uterine wall—the interstitial tube. Ectopic pregnancy may also occur in the ovary, and it has been asserted that the original site of implantation may be in the peritoneum, but this is not universally believed.

While the diagnosis of ectopic pregnancy presenting the classical symptoms may have its difficulties, "those cases that show atypical signs and symptoms are very confusing and the diagnosis is not made until the abdomen is opened. The classification of these cases into typical and atypical should be based on the pathology present instead of the symptoms."

"The ovum can be implanted anywhere between the follicle and the uterus, giving rise to the two primary types—tubal and ovarian. Most authors agree that other types, such as broad ligament and abdominal pregnancies, are the result of abortion of the tubal and ovarian pregnancies because they feel that it is doubtful if the ovum can be implanted upon the peritoneum or the ligament."

"Tubal pregnancy is by far the most common type and it can be unilateral, bilateral, single or multiple unilateral and bilateral, or both."

"Next in order of frequency is the so-called ovarian pregnancy and there is some question as to whether or not this is primary, or the result of extension from the tube."

"Broad ligament and abdominal pregnancies are now generally accepted as secondary types, the result of rupture or

*Read before the Section on Surgery, annual meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

incomplete abortion or an extension of tubal pregnancy into the ligament or peritoneal cavity."

"Ectopic pregnancy may terminate in one of several ways: Abortion, either complete or incomplete; rupture; absorption, disintegration or calcification of the ovum; removal by surgical intervention; or full time development. Abortion, most authors agree, is the most common termination and occurs in about 75 per cent of the cases, complete abortion being less frequent than incomplete. Rupture occurs next in order of frequency. The termination of tubal pregnancies depends upon the location of the implantation in the tube. Thus, if the ovum is implanted in the isthmus, the size of the passage does not permit much distension, and early rupture is the rule. By complete abortion is meant the expulsion of the ovum, membrane and contents into the peritoneal cavity. The resulting hemorrhage is slight. In the incomplete type there is only a partial loosening of the ovum from the tubal wall and the hemorrhage may be severe or moderate, depending upon the location of the vessels. Rupture occurs generally at the site of the placenta and is thought to be due to burrowing of the chorionic villi and distension. It enters either the peritoneal cavity or the folds of the broad ligament and generally occurs about the eighth week. If the ovum is not removed by surgery or is not absorbed or degenerating in one form or another, after rupture or incomplete abortion, and there is still enough placental tissue intact with its attachment to receive sufficient blood supply, it may develop further and even reach full term."

"Ectopic pregnancy may occur under any of the following conditions: In women who have borne no children; sandwiched in between two normal pregnancies; in women who have had repeated pregnancies; in women who have been exposed to possible pregnancies over a period of years, and followed by a normal pregnancy; or on the opposite side after a previous pregnancy."

"Ectopic pregnancy is seldom diagnosed before rupture because the physician is

not consulted until the accident happens. However, if the patient gives a history of early subjective and objective symptoms of pregnancy and a mass is found in either tube-ovarian region, it will be safe to assume that it is an ectopic pregnancy. After the rupture the diagnosis is fairly easy and can be made without much hesitancy."

Should a woman of child-bearing age appear for examination with the history of past irregular menstrual life, a missed period with or without previous pregnancies, and with or without a history of previous pelvic conditions, venereal or otherwise; complaining of sudden, intense pain in the affected side, accompanied by nausea, and vomiting; uterine hemorrhage, spotting or moderate in type, and fainting; and examination reveals tenderness, rigidity, increased size of uterus, with a small, soft mass in either tube-ovarian region, with a slight temperature, a moderate leucocytosis, increased polymorph count and a mild secondary anemia, one can feel reasonably certain that a diagnosis of ectopic pregnancy is correct.

"In considering the differential diagnosis the most common conditions to be confused with ectopic gestation are abortion, acute salpingitis and acute appendicitis."

"Acute salpingitis may be confused with tubal abortion but is quite often bilateral while an ectopic pregnancy is unilateral. The blood picture will be of some assistance and the menstrual history should be carefully studied."

In abortion the pain is more or less rhythmical similar to labor pains and the hemorrhage is more or less profuse with clots.

Diagnostic considerations in distinguishing between appendicitis and extra-uterine pregnancy must not cause delay in a necessary operation.

Treatment:—Operation is the only possible way of treatment, once the diagnosis has been made. Even if the symptoms point to a tubal abortion, it is much safer to open the abdomen immediately.

In cases with slight bleeding it is the

custom to remove the affected tube and retain the ovary when possible, and it is most important to inspect the other tube. Twin tubal pregnancy is not unduly rare, and three cases of triplets have been recorded.

In cases of ruptured tubal pregnancy with severe bleeding immediate operation is, of course, indicated, and whenever possible a blood transfusion should be given during the operation. This has a most dramatic effect, and undoubtedly saved the lives of three of my own cases. Before the abdomen is opened two intestinal clamps are placed ready. The abdomen is opened and the hand is at once plunged down into the pelvis, and the mass of clot and tube grasped and clamped on both sides, so as to stop the bleeding. This should always be done, as furious bleeding often begins as soon as the abdomen is opened, and it is useless to try and mop it away before the clamps are applied. As it is not possible to see if the bowel is adherent to the sac, we use these light bowel clamps, which do no injury to any adherent gut which may be included in their grasp. The blood and clot are rapidly removed, for which we prefer a suction apparatus, and then the mass between the clamps is inspected and the tube and pregnancy removed. Rapidity of operation is essential, and immediate steps must be taken to combat shock. A saline infusion is given as required.

Finally a smear should be examined for gonorrhea and a Wassermann test done during convalescence.

Appendectomy should not be performed in the presence of extrauterine gestation.

Results:—Cases recognized early and operated upon immediately should recover, in most instances. In our series of fifteen cases we had one fatality.

* * *

DISCUSSION

Dr. Atchley: It seems to me that the more we study about tubal pregnancies in the way of diagnosis, the less we really know. The diagnosis of tubal pregnancy is as easy a one it seems to me as any in the world if the history fits it, but my ex-

perience is about one in ten where the history fits the patient's symptoms. It may read like a story book and you won't have any trouble, but they are very difficult to diagnose where the history is of no assistance. I look back over the years and see how many times I have been fooled and wonder why in the world I was so dumb, but there is one thing I want to bring out, and that is the fact that these women have periods of pain. They have lots of pain in the abdomen, get better for four or five days in this particular, and then they will have some more. They may not have any visible pallor. Their hemoglobin will go down, where you can follow them up with blood analysis. But what I want to stress is that these women have periodic attacks of pain in the abdomen. Of course it is more or less likely when they are having a little hemorrhage. Then they begin to feel better. You think maybe that is a leaky tube. Of course if there is a massive hemorrhage, it is written on the abdomen; then the diagnosis is easy. The ability to diagnose tubal pregnancy is certainly the mark of a good gynecologist.

Dr. Long: I will express my humble attitude—that is exactly the way I feel about it—I am very humble in the presence of this because it is very difficult, but once is struck with the multiplicity of aids that can be employed in attempting to confirm diagnosis. Of course the history is fundamental; that is the first aid to diagnosis. The Freidmann test in tubal abortions are negative in about two-thirds of the cases, so a positive test is of some benefit and a negative one doesn't help a bit. Dr. Vornercran originated the idea of needling the abdomen, and I have seen him take a large needle and go directly into the adnexal area of a patient in Trendelenberg position. It looks a little blind to me, but that is the scheme he employs. A man by the name of Betterdol in Stockholm attempted to confirm diagnosis of intraperitoneal blood by a similar maneuver, but he did a posterior colpotomy through the vagina to demonstrate blood. Another feature of additional information is the curetted specimen.

Dr. Crawford spoke about leucocytosis being one of the signs. That is not so much in ectopic pregnancy, because we depend upon the history, and all of us have seen the leucocyte count very high and then very low, because the leucocyte count is high in the initial stage and then becomes low. At the same time, diagnosis of retroperitoneal hemorrhage and rebound tenderness is extremely valuable. The blood count is of very little value.

In conclusion, I would like to tell you about this—I think it is perfectly all right—I would like to tell you about a doctor's wife who proves my humble attitude. She came to my office one day when the doctor was out of town. She said, "I have a ruptured ectopic pregnancy. My husband laughed at me and he has gone off to another State." Her symptoms were suspicious enough that she was hospitalized, and after five days I finally agreed with her and operated on her, and she did have an ectopic pregnancy with lots of blood in the peritoneal cavity. So I am sure Dr. Crawford will agree that diagnosis is a little more difficult than he suggests.

Dr. Kernodle: The presence of shoulder strap pain in ectopic pregnancy gives a sign that occurs in a certain percentage of cases, and I have seen it twice in quite a definite manner. The first patient I saw with shoulder strap pain was a young woman, unmarried, that had a little menstrual delay and had a cold at the time and had a cough. When I first saw her she was complaining of practically no abdominal pain but a definite shoulder strap pain, and at first I thought it might be diaphragmatic pleurisy, but upon further examination it was determined that she had an ectopic pregnancy and it was proved at the time of operation. In looking the matter up, the occurrence of a shoulder strap pain in ectopic pregnancy is quite a definite sign that is often overlooked. I think it is of some value in assisting in diagnosis, as very few other conditions in the lower pelvis will cause this pain. The exact mechanism of the cause of this pain is not easily understood, but it is some disturbance referable to the splanchnic nervous system.

Dr. Longmire, Sapulpa: This is an interesting subject to me. In making the diagnosis in the smaller communities where the laboratory facilities are not so good, we have to rely on our ingenuity at times, and I have noticed over a number of years the symptom of shock or fainting spells. The patient complains of severe pain in the affected side, distention of lower abdomen, presence of a mass, and then acute anemia. These are the symptoms that I rely on a great deal. One may find a double ectopic pregnancy. I operated a case three or four years ago in which I had made a diagnosis of ruptured ectopic pregnancy, and in taking care of it I noticed a cystic ovary on the opposite side, which proved to be an unruptured ectopic pregnancy. So in this case there was a double ectopic pregnancy, ruptured on one side and unruptured on the other. I removed the sac and found a foetus.

Dr. Stout: I don't believe I can say very much that hasn't already been said about tubal pregnancies. It gets me in lots of trouble. The doctor spoke of differentiating from acute salpingitis and that is difficult, but also we have to differentiate from chronic salpingitis. We have cases that go over a period two to three weeks, then flow a little and then have a mass in one side and you can't feel anything in the other side. In those cases I have lots of trouble differentiating whether it is a tubal pregnancy or chronic salpingitis. I enjoyed the paper. It was very interesting, and on a subject that we must keep rehearsing in our minds; if we don't we will overlook our differential diagnosis.

Dr. Crawford: I will admit it isn't easy to differentiate ectopic pregnancy; sometimes it is pretty hard. But when you have the symptoms, feel the mass, and have spotting and menstrual disturbance, it seems we shouldn't have much trouble making the diagnosis, but I am afraid most of mine have been made after they got to the operating room. I had one interesting case where a patient had an ectopic pregnancy on one side, and two years later on the other side. I appreciate the discussion.

Appendicitis in Children*

MAURICE J. SEARLE, M.D.
TULSA

Appendicitis in children remains the most frequent cause of abdominal surgery. A recent article in the *Edinburg Medical Journal* presents the following percentage from a large group of cases:

Appendicitis 41.8.

Intussusception 37.6.

Intestinal obstruction from various causes 7.7.

Primary peritonitis 7.7.

(streptococcic and pneumococcic).

In this paper I shall confine my remarks largely to the pediatric aspect of this condition, stressing the distinct differences between the surgery of adults and that of infants and children.

The child is an organism in an unstable state of rapid evolution with reactions, growth factors, proportions, physiologic requirements, psychology, and pathologic processes differing greatly from the adult who has reached the state of physiologic stability. In other words he is not an adult in miniature.

When confronted with the necessity of making a differential diagnosis of an apparent acute abdomen in a child, the first point which one naturally considers is the history. Typically, the parent tells that the child has had attacks of recurrent abdominal pain at intervals during the past, either daily or longer. The pain may be sharp and stabbing, or burning, or a dull ache. There is associated nausea and perhaps vomiting. The child has had a poor appetite and perhaps has been constipated. The services of a physician are now sought because the pain has become more acute and he may have developed a very slight fever.

The examination of the child is now in order and I know of no situation which taxes the skill, tact and patience of the

diagnostician as this one. The child is peevish and sick—he hurts—he is suspicious of everyone, his parents, nurses and particularly the doctor. The first step is an attempt to allay his fears and gain his confidence. His expression is apprehensive if any move is made to touch his abdomen so *that* is postponed till the last, with examination beginning with his head. While listening to the history, a surreptitious inspection of the abdomen can be made, noting particularly whether he is lying quietly to protect a tender inflamed organ, whether his right knee is elevated, whether or not his breathing is of the abdominal type. The ears are then examined followed by the throat. Breneman of Chicago makes the unqualified statement that 50% of appendiceal inflammations are secondary to infections in the throat and Evans of University of Wisconsin reported eight times as many cases of appendicitis during influenza epidemics as in non-epidemic times.

This is not startling to the pediatrician who constantly examines children's throats and is cognizant of the fact that the lymphoid tissue of the appendix so closely resembles that of the tonsils that the former has often been spoken of as the abdominal tonsil. He therefore feels confident that throat infections have a definite etiologic relationship to appendicitis.

The chest is now examined, and I know it is not necessary for me to emphasize to this group the necessity of absolutely excluding a pneumonia, perhaps a small central involvement, or a pleurisy, particularly a diaphragmatic one. If the physical signs are inconclusive an X-ray proves valuable, and a blood count usually will show a much greater increase in the white cells—25,000 or maybe 35,000 in the case of pneumonia. Cautiously and furtively the abdomen is now approached and, making sure the examining hand is well warmed, gentle palpation is begun on

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the left side at first as that is the side less frequently involved.

Between screams probably, one ascertains the presence of muscle spasm or tumor masses. The right upper quadrant is then palpated and finally the right lower quadrant, all being done gently at first. Deep palpation now is tried noting points of maximum tenderness, together with evidence of rebound tenderness. This information is best noted by watching the child's face, which betrays the location of a tender spot by a painful expression, a wince or perhaps by a lusty scream. Do not ask: "Does it hurt here?" The answer is always in the affirmative. Percussion and auscultation may then be carried out, determining the degree of distension, the presence of dullness and the evidence of peristalsis. Rectal examination is not indicated except in rare instances; it is a painful procedure and the excitement it causes overshadows any information that may be obtained. At this point it is well to emphasize the fact that the physical signs of appendicitis in a child may not localize themselves in the right lower quadrant; the juvenile appendix seems to migrate more than the adult one; also, in the child the omentum is at a much higher level and the appendix gets very little protection from it in walling off and localizing.

The leukocyte count is usually between 15,000 and 20,000, but do not depend upon it to determine the diagnosis. A low count is of bad prognostic significance. The differential count, the Cooke-Ponder index, the sedimentation rate, serve the purpose of strengthening the chain of evidence but even though they are apparently normal do not be misled if the clinical signs are positive.

A number of conditions suggest themselves which must be differentiated and eliminated before a diagnosis of appendicitis is made. The first thought is: even though the signs and symptoms are abdominal is the pathology in the abdomen?

Frequently measles, scarlet fever, tonsillitis, basal and diaphragmatic pleurisy and pneumonia cause abdominal pains and symptoms which are most puzzling. Allergy may evidence itself in this manner, but the determination of the leukopenic in-

dex if some protein is suspected is proof positive in excluding this cause. The same is true of what might be called "essential acidosis" seen so very frequently in the child who has indulged in excessive fats in his diet, but who responds quickly to glucose therapy.

Food poisoning is usually recognized by the vomiting, diarrhea, lack of distension and dehydration.

Tuberculous peritonitis usually is not so acute, and is most often a secondary condition.

Pyelitis can be diagnosed by a urinalysis, but remember that appendicitis can occur concomitant with it.

Renal colic, cholecystitis, gall-stones, pancreatitis, perforated duodenal ulcer, are so rare in childhood as to be negligible.

I do not know how to differentiate a Meckle's diverticulitis, but it makes no difference as the treatment is identical.

Tetany and spasmophilia due to impaired calcium metabolism may simulate an acute abdomen, but the associated symptoms and signs serve to identify them. Typhoid fever is not difficult, and here the blood picture with the definite leukopenia is helpful.

Mesenteric lymphadenitis displays at times such identical symptoms that a diagnostic error is almost excusable. An X-ray of the abdomen may show the enlarged glands. It is best to err on the side of safety in a puzzling case and open the abdomen. Ovarian torsions are difficult to differentiate, but the treatment is the same as appendicitis at any rate.

Mesenteric thrombosis, intussusception, volvulus, etc., give a somewhat similar picture but there are several striking differences; the pain is colicky in character—it comes and goes—the tenderness is usually generalized, a mass can often be felt, and the child gives the typical picture of acute shock, with a sub-normal temperature and a weak very rapid pulse.

When these conditions have all been excluded and the diagnosis of appendicitis has been made, the question of treatment arises. Cases seen in the first 24 to 48 hours should be treated by immediate ap-

pendectomy. If this is not done, any one of three things occur:

1. It is not uncommon for the inflammation to subside and the child recover.
2. A generalized spreading peritonitis ensues which demands immediate surgery.
3. A well defined, circumscribed mass develops, due to the complete walling off of the inflamed organ. This positively should be treated expectantly, with the use of sedatives, gastric lavage, alkalinizing therapy, and the mass probably will disappear; however, this type should be operated later, in a month or six weeks when it is quiescent.

A striking difference exists between the adult and the child as regards peritonitis; in the adult it almost always follows appendicitis; this is not true in young children. The condition is called Primary Peritonitis because it arises from a cause which is extra-abdominal, but it is usually secondary to a throat infection; measles, scarlet fever, general sepsis, etc. It is due almost always to either the pneumococcus or the streptococcus.

The differentiation from appendicitis is of great importance because the treatment is different. From the onset the child with this type of peritonitis has more pain, more tenderness, more rigidity, more vomiting, has the typical Hippocratic expression, and is more prostrated. When confronted with this symptom complex there has again come into use the practice of abdominal puncture. A small lumbar puncture needle is inserted through the abdominal wall till it punctures the parietal peritoneum; suction is made with a syringe and although one obtains only a part of a drop of fluid, if this shows streptococci or pneumococci it is of tremendous significance in the treatment. The procedure is pre-eminently safe.

Although I admit it is not unanimous, the preponderance of opinion now is, that this type of case should not be operated, but rather it should receive pneumococcic serum if the corresponding type is available, or in the case of a streptococcic infection it is reasonable to suppose that it

would probably benefit by specific sera of that type, or even from such a drug as Sulphanilimid.

The operative technique for appendicitis and peritonitis, I shall not discuss, leaving that to the surgeons; however, the pediatrician should be of help in the pre- and post-operative treatment.

The child should be in optimum condition for operation—dehydration is combatted by subcutaneous or intravenous solutions of salt, glucose or Hartman's solution; with pernicious vomiting a nasal tube should be used with continuous gastric lavage; sedation is requisite.

As regards anesthesia, such drugs as Avertin, the Barbiturates, and cyclopropane are definitely not contra-indicated, although ether remains the one of choice because of its greater margin of safety.

Post-operatively the child must be handled carefully, especially as regards chilling; fluids are administered to prevent dehydration and to maintain the normal chemical balance; gastric lavage is used to control distension; sedatives are given as required; the food used depends upon the age of the child.

The tissues of children are very delicate, the operative fields are small, sharp dissection is necessary and in no type of surgery is more skill required. Fortunately the children are responsive to careful surgery, their reparative power is excellent, and their post-operative period is remarkably short.

The surgeon should constantly keep in his mind the conditions peculiar to infancy and childhood, the necessity of conservation of body heat, adequate food and fluid supply, skill and delicacy in handling tissues, hemostasis, anaesthesia, and also the value of close cooperation between himself and the pediatrician.

Not only are the differences physical but they are also mental, and it behooves us all to remember the effect of illness, therapeutic procedures, and hospitalization on the emotional development of the child, knowing that many psychological maladjustments of adult life originate in childhood.

DISCUSSION

Dr. John Powers Wolff, Oklahoma City: Dr. Searle mentioned one thing in his paper that presents a problem in the diagnosis of appendicitis, that is, mesenteric lymphadenitis. The diagnosis is difficult, but the general consensus of opinion is that other lymphoid tissue will be concurrently inflamed. The lymphoid tissue of the throat will usually be inflamed.

A point about the diagnosis of this con-

dition. The onset is much more acute and the temperature will usually be higher; running about 102 or 103 degrees. In appendicitis the temperature is not so high. The safest treatment is immediate appendectomy followed at a later date by eradication of infected lymphoid tissue in the throat. This seems to prevent future attacks. There seems to be no general agreement as to the etiological organisms in these cases.

TUMORS OF THE JAWS*

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The title of this paper is quite inclusive and it is intentionally made so, not because I feel that I can adequately present such a subject—as no doubt you will all appreciate before I have completed my talk—but rather to emphasize the following points.

1. This subject is a common condition and one which in various fashions comes to the attention of each and everyone of us, the E.N.T. specialist, the Dermatologist, the Syphilologist, the Internist, the Pediatrician, the Orthopedist, the X-rayist, whether he be diagnostician or therapist, the Neuro-Surgeon, the General Surgeon and the Pathologist.

2. Any study of this subject shows the poverty of knowledge in the minds of most doctors and their inclination to send all such cases to a dentist.

3. That a large percentage of people suffering with tumors of the jaws are inadequately, if not wrongly, treated.

Today I want to present to you an outline classification of tumors of the jaws, briefly indicating a sensible method of management of each type. I would also like to report briefly two cases which il-

lustrate treatment and the results to be expected from such treatment.

CLASSIFICATION

I. BENIGN

A. *Fissural Cysts*—"Certain cysts form from enclosed and retained epithelial rests at the place of fusion of the various processes from which the jaws are formed during embryonic development. These are called fissural cysts." There are two common types of these.

1. *Facial—Cleft Cysts*. These are located at the site of union of the premaxilla and maxilla. They extend into the vestibule of the nose and partly into the vestibule of the mouth. Such cysts have a tendency to be upon the bone rather than in the bone. Clinically, the patient shows a swelling in the anterior part of the nostril with swelling and fullness of the upper lip.

X-Ray examination—negative.

Treatment—surgical extirpation.

2. *Incisive Canal Cysts*—In dogs and rabbits there is a communication between the nasal and oral cavities called the Nasopalatine duct.

In the human fetus this is also present, but as a rule disappears. Any interference in the development may cause either

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a dimpling on either oral or nasal side, a blind sac, or even a communication.

Clinical Picture: The patient may have repeated swellings in the region of the palatine papilla with recession. If a retention cyst develops, he will have a permanent swelling; this is usually manifest on the oral side, in midline between the teeth but is not connected with the teeth.

Since they are lined with epithelium, once they cause any trouble they should be removed.

B. *Exostosis:* Of either upper or lower jaw are similar to exostoses elsewhere in the body.

Common location—symphysis of lower jaw.

They may be observed in people wearing artificial dentures. In these they occur along the alveolar ridges. The exostosis is a true outgrowth of bone having a cancellous and a cortex portion. On top of the cortex is usually a layer of cartilage and not infrequently on top of this development a bursa.

These tumors are never the seat of malignant disease.

Clinical Picture: A firm, hard, bony outgrowth. Occasionally those having bursal develop an infective bursitis, then they become quite painful.

X-Ray—positive diagnosis.

Treatment: If causing no pain, no particular interference of function, or any abnormal deformity, leave alone. If, for any of these reasons, removal is desired, it should be done by chiseling off the exostosis.

C. *Osteoma:* A localized area of new bone formed upon existing bone, usually arising at the site of an ossifying periostitis.

They are benign and do not become malignant.

X-Ray—Positive diagnosis.

Treatment: Ordinarily left alone. May be removed for cosmetic purposes.

D. *Chondroma:* Wherever we have bone we may have cartilage and wherever there is cartilage there may appear a chondroma, a myxochondroma or a chondro-sarcoma.

When one of these tumors is encountered by biopsy, the decision to remove must be decided upon the fact as to whether it can be completely removed, because it is safer to leave alone than to *partially* remove. Bloodgood states that in removing a chondroma, if a piece of tissue is left, there is always a recurrent tumor and ultimately the chondroma becomes a chondro-sarcoma.

E. *Epulis*—This is a bad term as it means gum. A better term would be Peripheral Giant Cell Tumor. It arises from the periosteum.

A common type of tumor occurring in both children and adults.

It is considered a benign type of tumor. If the predominating tissues are vascular they may be considered angiomatous; if connective tissue, may be considered as a fibroma.

Trauma is considered an etiological factor.

Shedding of deciduous teeth another.

Clinically: There appears in the mouth a painless swelling, more often on the external than on the internal surface of both the maxilla and mandible.

May be pedunculated, but usually has a wide base. Fairly well circumscribed. Firm consistency. Bluish purple in color. May arise about a tooth or push the teeth apart.

Treatment: Complete excision that includes part of the periosteum. A frozen or quick section is made to exclude malignant growth and also to ascertain complete removal, then thorough cauterization of the area. It is best done with an electric cautery.

II. INTERMEDIATE GROUP (BENIGN TO MALIGNANT)

1. Fibroma.
2. Myxoma.
3. Fibro-myxoma.
4. Fibro-myxosarcoma.
5. Fibro-sarcoma.
6. Giant cell tumor (central).
7. Dental Root Cyst.
8. Dentigerous Cysts.
9. Adamantine Carcinoma.
(Adamantinoma)

The first five, that is the fibroma, myxoma, fibro-myxoma, fibro-myxosarcoma, and the fibro-sarcoma, are all connective tissue type of tumors. This group of tumors occurs more frequently on the upper and lower jaws than in any other location.

They may grow within the antrum. They may arise centrally within the lower jaw. Early, they have a distinct capsule. They destroy bone by pressure.

This type of tumor was the kind removed from President Cleveland.

X-rays of this entire group of nine tumors show no positive points of differentiation.

They are not radio-sensitive and, therefore, should not be radiated.

TREATMENT

A. If the bone shell is intact, the covering tissues are opened up under local anaesthetic and a biopsy done; the type of tumor diagnosed; a portion of the shell is removed; the entire inclosed area then curretted out with a cautery. Mutilating excision is not necessary.

B. Should the bone shell have been destroyed by growth, the covering tissues are opened up by the use of a cautery; biopsy done; then complete removal of the tumor with the immediate adjacent tissue.

6 CENTRAL GIANT CELL TUMOR

Usually thought of as benign. The nature of these tumors is controversial. Some believe them to be neoplastic. Others feel they are an expression of "reactive resorption" or "resorptive new formations."

In our discussion we are considering the localized type of tumor occurring in the normal skeleton and appearing singly, thereby differentiating from the "giant cell" tumors occurring in osteitis fibrosis due to hyper-parathyroidism which, by the way, quite often involves the jaws.

Points of differential diagnosis should be called to attention.

1. In Hyperparathyroidism, the tumor may be either periosteal or central. It tends to be multiple in jaws as elsewhere in the body.

2. X-rays of other bones shows involvement.

3. Rheumatoid pains.

4. Blood calcium increased.

This type of tumor occurs in both jaws. It favors the parts of cartilaginous origin as the condylar part of ramus, symphysis of mandible, maxilla in region of canine fossa and ethmoid region.

Treatment: The lines of approach are the same as described for the previous group. When diagnosed, the area should be thoroughly cleaned out of all involved tissue with curette or cautery and then the cavity should be treated with a sclerosing substance as Carnoy's solution with ferric chloride or a solution of zinc chloride.

No extensive mutilating surgery is necessary.

7. DENTAL ROOT CYSTS

These are probably chronic dental root abscesses, because the pathological section show not only cystic areas but also evidence of old inflammation.

X-ray shows a defect in the bone.

When tooth is extracted, the cyst wall as a rule comes out also.

Treatment: Extraction of tooth; biopsy of tissue to rule out possible early malignancy. In those cases where all the cyst wall does not come out, after biopsy and quick section report, thorough currettling out of involved tissue.

8. DENTIGEROUS CYSTS

These are central bone tumors arising about a tooth root or non-erupted tooth.

Clinical Picture: Nothing definitely characteristic that would be of differential value. First sign is a swelling of the jaw.

Pathology: Within the bone shell is a connective tissue wall or lining which can be stripped from the bone shell; within this is a cavity containing clear or cloudy mucous-like fluid.

X-ray shows central cavity with bone destruction about a tooth or non-erupted tooth; this is then not diagnostic but suggestive.

Treatment: The plan of approach is the same as with the rest of the group.

1. If proven a dentigerous cyst, simple evacuation and cauterization of the cavity is sufficient.

2. Should the section show adamantine tissue cells, wider excision and cauterization.

PROPHYLAXIS

1. No tooth should be extracted or swelling of the jaw incised without an x-ray picture ruling out a central cavity.

2. No operative attack on these conditions unless prepared for pathological examination of tissue, because these are quite often early adamantinomas.

9. ADAMANTINE CARCINOMA

Adamantinoma is a term commonly used in speaking of this class of tumors. This is a bad term because it is misleading. One expects that there is tooth enamel in these tumors which is not true. Adamantine carcinoma is a better term because it emphasizes that the tumor is composed of enamel organ epithelium.

Secondly, this type of tumor may be derived from oral epithelium which has become misplaced in bone tissue.

It is a malignant tumor; rarely metastasizes. There is marked tendency to spread to the brain by direct extension.

Treatment: When diagnosed it must be removed at initial operation if a cure is to be expected. The small localized growths respond to excision and cauterization of the area. Larger areas demand excision of portions of the jaw and should be followed by radiation.

III. MALIGNANT GROUP

SARCOMA AND CARCINOMA

A. Sarcoma may divide into periosteal and central sarcoma.

Periosteal may develop in either jaw. If seen early, local removal; late wide excision is the only hope.

CENTRAL

Lower jaw—rare.

Upper jaw—frequently seen.

Treatment is not very successful but should have thorough cleaning out of antrum followed by radiation.

B. *Carcinoma:* Primary carcinoma of the bony structures of the jaws does not exist, but carcinoma of either jaw is not infrequently found.

It may arise from the oral mucous membrane and invade the jaw by extension along a tooth root. It may be of the adamantine type arising from misplaced epithelial rests. It may arise by malignant degeneration of the lining of any of the benign cysts I have enumerated. It may arise from the mucous membrane lining any of the sinuses. It may arise from the orbit and invade the jaw by extension. It may be a secondary metastasis from a malignant growth elsewhere in the body.

Diagnosis: The x-ray will be suspicious in some instances by having associated bone destruction, but actual diagnosis depends upon a pathological section and study.

Treatment: First, I want to make the statement that malignant tumors of either jaw are curable. The percentage of cases will depend upon the following factors:

1. Early diagnosis.
2. Adequate preoperative study and preparation.
3. Complete eradication of the involved tissue.

The diagnosis, as I said, must be made by pathological examination of any suspicious tissue, but the point I wish to stress is to have the tumor tissue about the jaws examined.

Once the diagnosis is made, consideration of treatment is in order. Naturally, if there is extensive bony destruction and massive soft part invasion palliative treatment is the procedure. But when found locally or not too widespread, then surgical removal with electric cautery is the procedure of choice. All surrounding tissue should be thoroughly coagulated with the cautery. Post-operative radiation should be considered if there has been any sign of lymphatic involvement. Wide excision of neighboring lymph tissue is being done less frequently. In using radiation, one must keep in mind that radium quite often gives rise to radium necrosis.

I wish to briefly report two cases which illustrate the results to be expected.

1. W. C.—Eleven year-old white male, brought to the hospital because of swelling and fullness of left upper lip and upper jaw. Swelling had been first noticed three months before and had grown progressively since.

Physical examination of local condition: there is a distinct bulging of the left upper jaw, causing the upper lip and left nostril to be pushed forward. When the mouth is opened, there is visible a swelling beginning at the gum margin and extending upward. This is on both sides of the teeth. When palpated it is hard and firm, but not tender. X-rays were made and showed the mass to be two inches in diameter. A biopsy was done and report of the tissue showed the tumor to be composed of dense fibrous tissue in which were scattered giant cells. Diagnosis was epulis.

Although tissue reported was benign due to extent, wide excision was necessary. This was done and the wound healed cleanly.

Follow-up observation at three months and nine months shows patient in good health and with no recurrence.

2. The second case is shown for the purpose of illustrating what happens in the late cases.

E. K., fifteen year-old white female had a tumor of the right eyelid removed three different times before reporting to the hospital. When first seen she had a tumor mass widely involving the right orbit and antrum. Palliative treatment was all that could be considered. A ligation of external carotid was done and patient lived some ten months before expiring in a pronounced state of cachexia.

* * * *

DISCUSSION

Dr. A. Ray Wiley: This is a very excellent outline you have given us. It is something that we can all put down and keep as a reference, for it is an excellent outline. I have listened rather closely; I don't remember Dr. Burton mentioning the fact that some of the tumors of the jaw are metastatic, and may lead to considerable confusion if considered a primary lesion when it is metastatic. We recently had such a case out at Morning-

side Hospital. In other words, very careful search early did not reveal the source, and yet we felt we were dealing with a metastatic sarcoma. Later the primary lesion was found. One other thing that the Doctor emphasized here, and I am glad to see him do it, too many of the cases are referred directly to a roentgenologist for treatment before proper diagnosis has been made, and the tumor is treated too long; until it is too late for the surgeon to do what good he might have done earlier. I have seen that happen and I know others have seen it happen. While I have no quarrel with the roentgenologists, there is a proper place for this treatment. There is no use to treat some of the tumors that we have, particularly the class that are not radiosensitive. I enjoyed this paper very much.

Dr. Reichman: I have watched some of Dr. Burton's cases and have worked with him some at the University Hospital. I enjoyed his paper very much and his emphasis on various points I most heartily concur in. There is one point that he emphasizes that I would like to say just one word about if I may, and that is the use of biopsy about the mouth. Of course it is valuable and I do not wish to detract from that value at all, but we should have in mind one point as far as the membranes of the mouth are concerned. Where we have acute or chronic inflammation, the basement membranes of epithelium will be broken down and many times the pathologist will give you a report of malignancy, whereas it is from the acute inflammation or sometimes from the chronic inflammation. I found that to be true accidentally by taking a section of an acutely inflamed gingival margin for the purpose of trying to demonstrate the presence of Vincent's organism. With that one exception, I heartily concur in the main points which he made regarding biopsies.

Dr. Kernodle, Oklahoma City: I would like to say that adamantine carcinoma is one of the most interesting types of tumor that we come in contact with. It arises from the adamantine cells in the development of the teeth. While on my service at the hospital, a colored woman came in with a recurrent tumor. It was as large as a grapefruit, occupying her entire low-

er jaw, pushing her tongue up against the roof of her mouth, and causing her dysphagia and dyspnoea. We removed that tumor and peeled it out and found that when we got through, the tumor extended to the angle of the jaw on either side. At the end of the operation we had nothing in the floor of the mouth. For ten days we kept that woman's tongue hanging out with a string on it until we had enough fibrous tissue formed in the mouth to hold her tongue in proper position. Unfortunately, she died six months later of pulmonary tuberculosis. She had gone to a doctor five years ago for tumor of the jaw and he had removed it. She went to another doctor two years later and he removed it again. She went to Mayo's Clinic and the tumor was again removed, but at that time it was probably so extensive that it could not be wholly removed and it recurred. These tumors that are adequately removed at the beginning are cured, but they have to be removed in their entirety. Their early removal is recommended because they are, as Doctor Burton said, on the borderline of malignancy.

Dr. Burton: I appreciate the discussion, especially the point about metastatic tumors. This emphasizes further the advisability of doing biopsies. I was particularly pleased to have Dr. Reichman's discussion, because Dr. Reichman is doing quite a lot of work about the mouth, and he brings up a point that I think is well taken,

that of biopsy. We must get the idea of cooperation; the pathologist and roentgenologist and surgeon must sit down together and talk over these things. It was my pleasure last Fall to attend several conferences where they were dealing with malignancy about the face and head. The patient was brought in, the record was discussed and it was decided what was the most advisable form of treatment, whether the patient was amenable to surgery with his diagnosis, and whether there should be radiation post or pre-operatively. I think that cooperation is important in all types of tumor. I certainly appreciate the discussion.

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The Treatment of Gonorrhea in the Male*

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CHAPTER X

MINOR COMPLICATIONS—BALANOPOSTHITIS

Because of the irritating effect of the discharge on the glands and foreskin, this annoying complication is seen rather frequently, especially in those of negligent

habits. The patient should be impressed with the importance of bathing the parts often with a mild soap and water. The dressing that serves to collect the discharge should be changed frequently and it may be advisable to use some sort of antiseptic dusting powder if there is a tendency toward skin or mucosal exfoliation.

*This is the fifth and last installment of "The Treatment of Gonorrhea in the Male." Previous installments appeared in the May, June, July and August issues of The Journal.

When a rather inflammatory condition is present as manifest by edema and pain, hot permanganate soaks (1:8000) will be found helpful. In individuals who have a redundant foreskin, the added swelling of the prepuce produces a phimosis which if not easily retractable will allow infection beneath to assume serious destructive proportions. This is especially evident when a chancroidal infection is present. Patients with tight prepuces should be warned to be careful in retraction of that structure past the corona especially when difficulty is encountered doing so because of the possibility of producing an irreducible paraphimosis. In such instances irrigation of the sac several times daily should be advised.

Ulcerative lesions beneath an irreducible phimosis should not be treated conservatively for too long a time; surgical steps to improve drainage should be taken as serious destruction of the tissues of the glans and even the urethra may result. The physician in such instances should "dog-ear" the foreskin by means of lateral incisions of sufficient length to allow the prepuce to be retracted so as to obtain adequate exposure of the infected area. This can be done under block anesthesia by injection at the base of the penis. Because of the infection, the high frequency cutting current is the safer method of performing the incision followed by electrocoagulation of the bleeding points. No sutures are taken and the organ is dressed with dry iodoform gauze with the same dressing used thereafter. At a later date when the infection is controlled a plastic circumcision may be performed trimming up the redundant tissue under local infiltration anesthesia.

As regards the urethral infection it is probably better judgment to disregard for the time being. Routine urethral treatment may be resumed when the external tissues have resumed a more normal state. It is also well to keep in mind that any ulceration involving the genitalia should suggest to the physician a syphilitic infection; dark field examinations of the serum from these ulcerations should be persisted in, in order to prove or disprove the presence of this disease. A follow up of a blood Wasserman should be also in-

sisted upon for several months following such a complication. The patient should further be advised, in instances where ulceration has occurred around the urethral meatus that stricture of this region will probably occur and this will require dilatation for an indefinite length of time.

DIFFUSE PERIURETHRITIS WITH CHORDEE

Peri-urethral inflammation with involvement of the corpus spongiosum is a frequent painful complication of the disease. It is present to some degree in practically every patient the first ten days of his infection. When severe it produces a condition termed chordee which is a painful, downward crooking of the organ on erection resultant from the inflammatory fixation of the urethra to the adjacent tissues. To forcibly straighten out such a penis is a therapeutic brutality and should never be done; hot penile soaks is a more rational method of obtaining relief.

PERI-URETHAL ABCESS

This painful complication is rather common, especially in those patients in whom the urethra has been subjected to extreme trauma in the form of strong medication, high pressure irrigations or instrumentation during the acute phase of gonorrhea. Judgment in draining the abscess must be exercised. Preliminary hot packs will soften and localize the infection and not rarely abort the process by inducing spontaneous drainage of the gland by way of the urethra; however surgical drainage usually becomes necessary in most instances. As soon as the condition has been thoroughly localized, under local anesthesia a longitudinal incision is made into the swelling thereby evacuating its contents. This incision must not be carried too deep as the urethra will be entered and a permanent fistula develop. It is probably well to desist from all local treatment during this acute complication for fear of encouraging this latter condition. Fortunately, unless the fistulous opening is extensive, subsequent urethral dilatation will almost always be followed by satisfactory closure.

LYMPHADENITIS AND BUBO

Enlargement of the adjacent inguinal glands is not necessarily a complication of gonorrhea as it is rather a constant find-

ing to some degree in each instance of the disease. Unless secondary infection occurs, usually in the form of the bacillus Ducrey, no fear should be held that they will suppurate; gonococcal lymphadenitis is rarely productive of pus. Lymphangitis manifesting itself as a "whipcord-like" swelling of the superficial lymph vessels along the dorsum of the shaft, occasionally develops. These acute inflammatory conditions demand little more than hot fomentations to the affected region and which usually results in rapid improvement.

* * * *

CHAPTER XI PROOFS OF CURE

No more perplexing problem confronts the physician treating gonococcal infections than the decision that the patient is completely free from the disease. Despite the common belief held by many of the laity and not a few physicians, gonorrhea can be permanently cured. The recurrence of the disease about which one hears so frequently, occurs usually in those who at all times have slight but definitely demonstrable evidence of infection. In most instances an examination will reveal shreds in the urine or pus in the prostatic secretion. Certainly the probability of cure is further reinforced when indulgence in alcohol or sexual intercourse fails to activate the disease.

Time is the essential factor that proves the cure of gonorrhea. It may be stated that the longer an individual goes without recurrence, the more positive the physician may be that a cure has been obtained. An arbitrary period of approximately three months following cessation of all signs and symptoms of the disease may be considered sufficient in order to assure the individual of his freedom from gonorrhea. Rarely will the infection recur where no positive signs are present after such a period of time. Glandular structures wherein the gonococcus become totally sealed will become spontaneously sterilized in this length of time. However, in the interest of safety to the sexual partner, intercourse without condom should not be allowed for some time after that.

At this point it is well to emphasize

the dangers incident to sulfanilamide therapy as it pertains to this aspect of the disease. The addition of this drug as an adjunct in the treatment of gonorrhea, because in many instances it obliterates all the signs and symptoms of the disease quite early, holds an element of danger as regards infectiousness not generally appreciated. In our experience, in only a small percentage of patients for whom the drug is prescribed, will there be followed a rapid complete eradication of the infection within a matter of days. The great majority of individuals who are given this medication will show a relapse of infection sometime within the first three or four weeks. It is true, active discharge is lessened even to the point of clear urine in both glasses, but infection of a sub-clinical degree is doubtless still present as indicated by a recurrence of discharge. In a few, the administration of sulfanilamide seemed not to shorten the course of the disease but actually lengthen the time necessary to obtain a positive cure. The stained smears in such instances will show few, if any, organisms but the gonococcus is still present as manifested by the constant appearance of slight but definite muco-purulent discharge and shreds in the urine. Doubtless, in these, the drug exerts some inhibitory effect on the organism which consequently hinders the development of the maximum immunological response.

In those patients in whom a relapse has occurred, we have found it requires eight to ten days following cessation of the medication before discharge reappears. When relapse does occur little good is derived from administration of the drug a second time. Sulfanilamide therapy shows the best results the first few weeks of infection. However, chronic cases of gonorrhea who have not been given the medication previously, respond very satisfactorily to this form of therapy.

In view of this experience, we feel the physician now holds a greater responsibility than ever in the proper control of the infected individual in order to prevent him from infecting others. Heretofore the presence of a constant purulent discharge

has been a deterrent to the individual so far as him transmitting the infection to others. With this absent, unless the patient is repeatedly and emphatically warned by his physician to exercise caution in this regard, an infection will result in an innocent party. Because of this fact we especially wish to deplore the tendency by physicians of prescribing this medication with no complete follow-up management of the infected individual.

Because of the above reasons patients in our clinic undergoing treatment for gonorrhea are managed little different than in the past. Sulfanilamide is given but more dependence is placed on tissue stimulation by regular daily local treatment in addition to other therapeutic measures. We feel that the cure of gonorrhea is based on the development of a definite tissue immunity to the disease, slowly built up and this requires weeks to become effective. The conduct of the individual undergoing treatment is an all important factor and only by seeing these patients frequently can we obtain the best standards of cooperation. Little promise of an early cure is held to the individual despite the optimistic evidence of clear urine and no discharge. After three or four weeks of such routine treatment we observe the case for an equal length of time and then endeavor to activate any possible latent infection that is present by the administration of vaccine and the passage of sounds.

Unless the profession in general realize this particular limitation in the use of sulfanilamide for the treatment of gonorrhea, society will see within the next few years a spread of this disease to a degree hitherto unknown.

How may the physician evaluate the probability of cure? A review of the progress of the case under treatment will be found of prognostic value in this regard. If the treatment response has been uniform, that is, there has been a gradual diminution of signs and symptoms without relapses, he may feel confident that immunity has been effectively and complete-

ly acquired. On the contrary, if the patient required an unusual length of time to recover, and his clinical course was marked by repeated exacerbations of inflammatory activity, the complete cure of the disease should be viewed with suspicion. Quite often these patients will harbor a quiescent foci in some tiny gland that will explode into clinical activity at the slightest provocation. But, as stated before, rarely will these patients be completely free from all signs of the disease. Invariably massage of the prostate or a centrifuge specimen of the urine will reveal some evidence of inflammatory reaction.

What is the clinical evidence of cure? To tabulate:

1. Three months must elapse in which the individual is free from all manifestations of the disease.
2. No microscopic evidence of inflammation must be present following examination of the urethral secretion, the centrifuged urine and the prostatic secretion. Such examination should be performed at least three times, at intervals of three or four days.
3. The passage of a medium caliber sound must not be followed by any purulent discharge and what secretion is produced must be examined and found free from any specific bacteria.
4. Indulgence in normal sexual activity as well as the drinking of alcoholic beverages must not produce any evidence of disease.

In conclusion it is well to advise a blood Wasserman test to be performed some time before dismissal, even when definite local evidence of syphilitic infection has been lacking. As this disease is contracted usually in the same environment as gonorrhea and as an intra-urethral chancre may be masked by a gonococcal infection, one will occasionally diagnose a syphilitic infection which otherwise would have gone undetected.

[THE END]

*To the Members of the House
of Delegates and to the Presidents
and Secretaries of the County Medical
Societies of the State of Oklahoma:*



By unanimous agreement of a quorum of the Council of the Oklahoma State Medical Association, in called session assembled at Oklahoma City, September 30th, 1937, and by authority vested in me as President of the Oklahoma State Medical Association, and because of the pernicious medical bill recently initiated and which is proposed to be submitted to a vote of the people, I hereby call a meeting of the House of Delegates of the Oklahoma State Medical Association to assemble at

*The Skirvin Hotel, Oklahoma City, at Six P. M.
Wednesday, Nov. 3, 1937*

for the purpose of considering said proposed bill and other legislation that may be proposed.

Furthermore, by authority of the Council in the above mentioned meeting, I invite and urge all Presidents and Secretaries of County Medical Societies of Oklahoma to attend and participate in this meeting.

The dinner will be Dutch and \$1.00 per plate and served at 6 o'clock sharp, after which able speakers will discuss our problems pertaining to medical laws.

SAM A. McKEEL, M. D.

President Oklahoma State Medical Association.

Ada, Oklahoma
October 10, 1937.

THE JOURNAL

OF THE

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McAlester, Oklahoma

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McAlester, Oklahoma

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

FALL CLINICAL CONFERENCE

The Eighth Annual Fall Clinical Conference of the Oklahoma City Clinical Society will be held November 1-4, at the Biltmore Hotel in Oklahoma City. This post-graduate medical assembly again offers the profession of the Southwest another series of intensive clinics and lectures covering the most important fields of medicine, surgery, and the specialties. The sixteen guest lecturers this year are among the recognized leaders in their respective fields and have chosen very practical subjects. In addition to the distinguished guests, the program includes seventy-two lecturers selected from local members of the Society, all of whom have

teaching ability and practical experience in their particular subjects.

The officers and members of the Oklahoma City Clinical Society, being cognizant that the rapid development of new facts and theories in the field of medicine necessitates frequent post-graduate instruction for those who would progress, have arranged in this course a four-day period of very intensive instruction at a most nominal expenditure of time and money for those who attend. Those of us who have attended this conference in the past have been impressed with the precision in which the program is carried on, the diversity of it, the practical experience gained from the lecturers and our direct association with them, and the wholehearted hospitality accorded all visitors. We feel that the stimulation received from attending these meetings always tends to bring the profession into a closer understanding of its problems and into a closer fellowship as members of our great profession.

The announcement of the coming meeting will be found on first cover page of this issue of The Journal, and we are sure you will be impressed with the prominence of the guest speakers and the program in general. We believe you should attend this meeting and that you will be well repaid for the time spent there.

AN OBLIGATION

In this issue of the Journal appears the fifth and final installment on the subject of "Gonorrhea in the Male." This has been a very exhaustive treatise on this subject and has been published for a very definite purpose. It has been generally observed that this disease is poorly and inadequately treated by many practitioners, which has caused much suffering to the patient with the initial infection, as well as a communication of the disease to many innocent parties. The treatment of gonorrhea in the male is not a simple procedure and should not be undertaken unless the physician is prepared to carry out scientific treatment and meet all complications which may arise. No gonorrheal patient should be discharged, as cured, unless all of the observations are made as you will

find indicated in this last installment, and if this is observed the number of young wives that go to the operating table for mutilating pelvic operations will be many less, as will also the number of cases of sterility in the patient, as complicating epididymitis will be much more infrequent.

We are therefore not only obligated to the patient himself but to society in general.

SPEAKING BUREAU OF STATE HEALTH DEPARTMENT

The following list will be available for County Medical Society program:

Dr. Paul J. Collopy, Pediatrics and Obstetrics

Dr. R. M. Adams, Venereal Disease Control

Dr. W. O. Murphy, Tuberculosis and Chest

Dr. M. R. Beyer, Communicable Diseases

Dr. J. T. Bell, Assoc. Pediatrics and Obstetrics

Dr. Chas. E. Leonard, Public Health

Jo C. Rose, Vital Statistics

Dr. Chas. M. Pearce, State Health Commissioner

We have made contact with the superintendents of the mental institutions and they will be glad to send a man to speak on neurosyphilis and other mental diseases.

For any request for speakers please address State Health Commissioner, Dr. Chas. M. Pearce. It is requested that two weeks notice be given.

News of the County Medical Societies

OKMULGEE County Medical Society met September 27th at the Hotel Belmont, Okmulgee, for their first fall meeting. Following the dinner at 6:30 Doctors C. J. Fishman and Jess D. Herrmann, both of Oklahoma City, spoke on the subject "Symposium on Complications and Sequelae of Head Injuries."

KAY County Medical Society met September 16th for their first meeting. The subject of Liability Insurance was discussed, and Drs. Berry, Blackwell and Moore, Ponca City, were appointed as a committee to investigate the matter.

Books Received and Reviewed

TEXTBOOK OF SURGERY, by American Authors. Edited by Frederick Christopher, B. S., M. D., F.A.C.S. Associate Professor of Surgery at Northwestern University Medical School. Cloth, 1682 pages. Price \$10.00. W. B. Saunders Company, Philadelphia, 1926.

One Hundred eighty-four distinguished surgeons have contributed to this volume and it has been very carefully edited and compiled by Dr. Christopher. The contributions of the various authors on the subject on which they are most proficient and familiar is an excellent idea as will be evident to anyone who studies this book. It is profusely illustrated, the illustrations carefully portraying the subject matter of the text. The index is very complete, which decidedly increases its value, as this accomplishes a very ready reference. The book is decidedly more applicable to the practices of the surgeon than to the student and leaves very little to be desired as a book of reference to the practicing surgeon.

THE OKLAHOMA STATE DIETETIC ASSOCIATION

The Oklahoma State Dietetic Association was organized in Oklahoma City on May 15, 1937. The Oklahoma City Dietetic Association sent invitations to all the dietitians in the state on the American Dietetic Association list asking them to be present at a meeting on Saturday afternoon, May fifteenth, at the University and Oklahoma Club in Oklahoma City. Twenty dietitians came and officers of the first Oklahoma State Dietetic Association were elected and the constitution adopted.

The officers for this year are:

Miss Ann Hains, President, Administration Dietitian at St. Anthony Hospital, Oklahoma City.

Mrs. Murl Campbell Roby, Vice President, Consulting Dietitian, Tulsa.

Mrs. Margaret Durrett, Treasurer, Dietitian at Oklahoma General Hospital, Oklahoma City.

Miss Eva Gibson, Secretary, Dietitian at Veterans' Hospital, Sulphur.

DR. ALVA A. WEST

On July 1, 1937, Dr. Alva A. West, Guthrie, passed away as a result of cerebral hemorrhage, at the age of sixty-four years.

He was a graduate of Northwestern University Medical School of Chicago, Ill. In 1906, Internship at Lake View Hospital Chicago, and took post graduate work at several European Universities specializing in surgery.

He was a member of the Logan County Medical Society and State Medical Association for the past thirty years.

He was a member of the First Methodist Church, and Thirty-Second degree Mason.

He is survived by his wife and one son. Services were held at the First Methodist Church, and he was laid to rest in Summit View Cemetery.

The Chairmen of committees appointed by the president are:

Community Education—Mrs. A. N. Wilkins, Leedey, Okla.

Administration—Miss Mary Barnes, Dietitian at A. and M. College.

Diet Therapy—Miss Veda Bailey, Dietitian at Wesley Hospital, Oklahoma City.

Professional Education—Miss Laura Miller, Professor of Nutrition, Oklahoma University.

Following the meeting a banquet was held at the Oklahoma Club. The speakers were Dr. LeRoy Long, Sr., who made a most gracious address welcoming the new organization into medical circles of the state and wishing it success; the second speaker was Miss Florence H. Smith of Guthrie, a former president of the American Dietetic Association. She gave a very interesting history of the American Association which was organized in 1918, and told of some of her pioneering experiences as national president.

The first executive meeting was held in Sulphur, June fifth. A Sunday morning breakfast was given at the Artesian Hotel by Miss Eva Gibson in honor of the officers. Following the breakfast a business meeting was held. Later they ate lunch at the Veterans' Hospital where they met Dr. F. E. Sadler, superintendent, who has taken a great interest in the new organization. On June the nineteenth the second executive meeting was held in Tulsa where the officers were guests of Mrs. Murl Campbell Roby, the vice-president; and on July the eleventh the third meeting was held at St. Anthony's Hospital, Oklahoma City, following which Miss Ann Hains, president, gave a lovely buffet supper.

These meetings were held to perfect the state organization. Committee chairmen were appointed; each committee's work was outlined; policies of the group decided upon, etc.

Qualifications of Dietitians

The membership of the Oklahoma Dietetic Association is now composed of twenty women who are required also to be members of the American Dietetic Association.

Anyone who meets the following requirements is eligible to be an active member: Any person who possesses the following education and experience, and whose application has been accepted by vote of the Membership Committee may become an active member of the Association, subject to the approval of the Executive Committee.

EDUCATION: (1) A bachelor's degree from an accredited college or university with a major in Foods and Nutrition or Institution Management which is recognized by the Executive Committee, or (2) A Bachelor's degree from an accredited college or university followed by courses to complete a major in Foods and Nutrition or Institution Management which is recognized by the Executive Committee.

EXPERIENCE: Subsequent to the completion of the foregoing educational requirements each active member shall have had experience as follows: (1) Satisfactory completion of a course in applied nutrition or institution management approved by the Executive Committee, or (2) At least two years successful experience in a position of responsibility as dietitian in a hospital, cafeteria, dormitory, lunch room, hotel, or similar field approved by the Executive Committee, or (3) At least two years successful experience in teaching such professional subjects as dietetics, or nutrition, or foods, or institution management, or (4) At least two years of successful experience in Community or Clinic Education in foods and nutrition,

or (5) At least two years of successful experience as foods, nutrition, or equipment advisor to an organization or publication, or (6) Published original investigation in foods, nutrition, or institutional management.

One of the purposes of the state association is to maintain standards of the American Dietetic Association, and eliminate persons who call themselves dietitians and nutritionists without meeting the requirements. All hospital dietitians are required to have a degree in Foods and Nutrition from a recognized college, and a year's internship in an accredited hospital giving a special student dietitian course.

Qualifications of Dietitians (Personal)

The qualifications dietitians should possess have been listed often: the first and foremost is innate administrative ability, (2) sound technical foundation that meets the semester hour distribution of subject matter required by the American Dietetic Association with particular emphasis on the social and biological sciences and institution management, (3) character, personal appearance and dynamic personality that are known to be co-ordinating assets of all true executives, (4) manual dexterity, unusual foods skill and refinement of sensibilities with a keen sense of taste, smell and color appreciation, (5) adequate liberal arts foundation, especially English, art, design, and general personal refinement and culture, (6) a real liking for people, (7) a consuming interest in the work coupled with superior health, a sense of humor and creative imagination.

The administrative side of dietetics is being more emphasized because any dietitian who progresses far in her profession, outside of pure research, has to depend in a great measure on her administrative ability. Many phases of her work besides a knowledge of nutrition, are becoming more and more important.

At present the Oklahoma State Association has twenty members. These women will try to stimulate interest in their communities by (1) group instruction (in health clinics, baby welfare stations, schools, churches, clubs, and hospital clinics), (2) radio talks, (3) newspaper articles, one of the best mediums of bringing help to families.

CONCLUSION

It is the aim of the Oklahoma State Dietetic Association to cooperate in every way with the medical profession.

EVA GIBSON, Secretary.

—O—

The Amount of 'Benzedrine' In a Therapeutic Dose With 'Benzedrine Inhaler.'

By means of a special measuring apparatus Simpson and Simon (Am. J. Pharmacy, 109:342, July, 1927) determined the average amount of "Benzedrine" (benzyl methyl carbinamine, S.K.F.) inhaled from a therapeutic dose with "Benzedrine Inhaler." The greatest amount obtained from two inhalations in each nostril (the recommended dosage) was 0.67 mg. and the smallest amount 0.09 mg. The average of the 90 tests made was 0.2 mg.

On this basis it would require 215 inhalations at one time to equal the average oral therapeutic dose of 20 mg. of "Benzedrine Sulfate." Natural loss of "Benzedrine" through exhalation might further widen the margin of safety. It is concluded that serious toxic reactions from the use of "Benzedrine Inhaler" appear unlikely, even with gross overdosage.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

PLASTIC SURGERY

Edited by

GEO. H. KIMBALL, M.D., F.A.C.S.
404 Medical Arts Building, Oklahoma City

The Problems of Unilateral Harelip Repair. Forrest Young, M. D., Rochester, N. Y. S. G. & O. September, 1937.

The author in a very well written article points out the ideals to be attained in harelip surgery. He further states that the possibilities in harelip surgery are not fully realized. The average repair of a harelip leaves a child so marked that it is perfectly evident that the individual is not as you or I.

The ideal then in repairing a harelip is to produce a face which to the casual observer bears no stigma of the original fault. This is a most difficult task and a result not often obtained, but by dint of hard labor and experience, a thing which can be fairly closely approximated. To the highly critical eye none of them will be perfect, but some will be acceptable.

The author points out that the secret of an acceptable result is that the face be normally contoured (symmetrical). He divides the deformities in three groups:

1. The separation of the maxilla, which may vary greatly. There may be a slight notching of the lip, a normal contoured maxilla with the only fault being absence of the lateral incisor tooth in line with the cleft; there may be only slight indentation of the inferior edge in line with the separated lip, and so on until we reach the most marked deformity with wide separation of the maxilla and forward projection of the pre-maxilla on the uncleft side.

2. There is the cleft in the lip. At first glance these seem alike, varying only whether the split extends completely into the nostril or only part way through the lip. This is true for the most part but in many cases there is considerably less available vertical length of lip on the cleft side than on the uncleft. This should be carefully looked for and be considered in the repair, for a slight discrepancy in vertical height of the lip on the two sides, i. e., distance from ala to mouth line, is quite noticeable in the finished product.

3. The third, the deformity of the nose, is the most important of the three, and varies most widely. There is in all unilateral harelips, excepting those which are barely notches in the lip line, abnormality in contour of the nostril on the affected side as well as malposition of the nose as a whole. The nose is shifted to the side opposite to the cleft. The columella lies obliquely inclined from above, downward toward the sound side, so that a line through the base of the columella is not in the horizontal plane, but an oblique one. The nostril in the extreme case may be drawn out into a flat line with the lining of the nares in its lateral aspect flush with the cheek and lip surface, and in such instances, may be mistaken as a part

of the lip. The lateral base of the ala may have very little form, almost blending with the cheek.

THE REPAIR. The successful repair of a harelip must overcome the abnormalities mentioned. The cleft in the bone can be disregarded, for there are very few jaw splits which will not close from the pressure of the repaired lip and its constant muscular play, even though the repair is done relatively late. The so-called Brophy operation actually done years before Brophy's popularization of it, is unnecessary and deforming. The wiring of the jaw split destroys or deforms tooth buds, often causing later retrocession of the upper face, and is moreover, attended by some hazards.

The author enumerates several points to be kept in mind in order to attain a normal lip. First, the vertical height of the lip on the two sides should be equal. Second, the vermilion edge should meet smoothly on the same plane.

Types of operation:

1. Rose.
2. Thompson.
3. Mirault.
4. Owen.

The Rose operation is simple but it leaves as a rule an upper lip that is too long to be artistic. The scar is straight instead of staggered.

The Thompson operation also is simple. Its principal fault is that it produces a lip that is too tight along the lower border. Also it does not reconstruct the nostril floor.

The Mirault operation sacrifices practically no tissue. It allows for reconstruction of the nostril. It is difficult to produce a smooth vermilion border in this type of operation. And also sometimes the vertical height on the cleft side is a problem as it tends to shorten after operation.

THE NASAL DEFORMITY: The author states that the problem of repairing a harelip is really one of producing a normal nose as nearly as possible. The nose as a whole should be in the midline, columella vertical to the mouth plane, nostril floors on the same level, nostrils same size and shape. Mobilization of the lip on each side is necessary to accomplish the above ideal. The author describes by diagrams the operative steps.

Also he points out that these children should be typed for blood transfusions, should be fed as soon as they are awake, by a medicine dropper and if necessary small saline infusions to keep up the body fluids. The lip is kept clean by peroxide used at frequent intervals. Small saline dressings are applied in case of redness about the wound. Skin sutures are removed in about 48 hours followed by zinc oxide ointment applied to the lip twice a day. Nostrils to be kept clean with tooth-pick swabs. Logan bow is left in place for two weeks. Internal sutures are removed at the end of third week. The child is kept under observation so that any secondary operation or orthodontic procedure can be carried out.

THE OPTIMUM TIME FOR OPERATION: There is rather general agreement that harelips should be repaired as soon after birth as possible. Many men believe that the operation should

be carried out within the first forty-eight hours after birth. The author states that he is not quite in such a rush as this. He thinks the optimum time depends more on how the baby takes feedings and gains weight. Also that is why he would just as soon wait until the baby reaches 4 to 6 weeks of age before operation. He insists that the child be in good physical condition, especially the upper respiratory tract, before operation. A running nose is a definite contraindication to repair. Blood should be available for transfusion, as it is occasionally needed immediately after operation.

COMMENT: The author has a very well written article together with remarks that bespeak of experience. He is very frank in that he admits that all cases do not turn out perfectly, but some are acceptable.

He exhibits wisdom in saying that the child must be prepared before operation. At that time infection is better withstood, there is more lip to work with and I think the final result is better.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
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Carcinoma of the Cervix During Pregnancy. By W. C. Danforth, Evanston, Illinois. *The American Journal of Obstetrics and Gynecology*, September, 1937

It is indicated that carcinoma of the cervix during pregnancy is rare. Based upon collected statistics, the author estimates the frequency of carcinoma in pregnancy to be 0.0321.

The rarity of the affection is due to the infrequency of pregnancy at the time of life when carcinoma is most frequent, to possible chemical changes in the cervical secretions (Wertheim), to the presence of "a large, necrotic carcinomatous crater upon the cervix;" to obstruction of the cervical canal by tumor tissue.

It is believed that in carcinoma of the cervix during pregnancy the carcinoma was probably present before the pregnancy, but this has not been definitely established. However, it is now known that when there is a carcinoma of the cervix in connection with pregnancy the carcinoma develops very rapidly.

"Nearly all pregnant women who have cancer of the cervix are pluriparas." It appears to be rare in the second pregnancy, and it is very exceptional in the first.

It appears that a continuation of pregnancy is compatible with a small carcinoma confined to the visible portion of the cervix, but if the cervical canal is invaded the patient will probably abort.

Notwithstanding the rarity of carcinoma of the cervix during pregnancy, the author reports the cases of four patients observed in the department of obstetrics and gynecology of Northwestern University Medical School and at Evanston Hospital.

The first patient was 35 years of age, and was four or five months advanced in her second pregnancy. The cervix was large, hard, friable, vascular. A biopsy specimen indicated carcinoma. The uterus was emptied by abdominal hysterotomy, "the intention being to irradiate as soon as possible after the operation." There was infection, peritonitis and death.

The second patient was 37 years of age, in her third pregnancy. There was a small lesion "at the base of a healed laceration." A biopsy specimen

indicated carcinoma. In this case the pregnancy, if it existed, was very early. It was decided to do a curettage, to be followed by radium. The tissue removed by curettage revealed "a very small product of conception." There was an introduction of radium into the cervical canal, it being screened by 1 mm. of brass and rubber, "and a palisade of needles each containing 10 mg. was placed about the periphery of the growth." There was recovery. Six years later this patient was alive and well.

The third patient was 23. In the case of this patient the lesion of the cervix was discovered at the time of confinement. Four years previous to that there was a lesion of the cervix with a four plus blood Wassermann. Antisyphilitic treatment caused the disappearance of the Wassermann reaction. There was a one plus Wassermann during pregnancy and after delivery. There was bleeding during the puerperium. A biopsy specimen showed "a highly anaplastic type of epidermoid cancer." The patient was treated by electrocoagulation of the accessible portion of the cervix, and this was followed by 3,500 mg. hours of radium. "The result was unsatisfactory and death followed on October 19, 1934." The investigation of the patient was made January, 1934.

The fourth patient was 36 years of age. She was four months in her second pregnancy. The cervix was enlarged, indurated, vascular. "Two polyps were visible at the external os." A biopsy specimen was reported as follows: "Squamous cell carcinoma of the cervix showing predominance of cells of the basal type and a high degree of anaplasia in some areas." The uterus was emptied through a short incision "as far as possible away from the cancerous area" (presumably, an abdominal hysterotomy). A week later there was an electro coagulation of the accessible part of the cancer, and this was followed immediately by 5000 mg. hours of radium which was employed by means of the Curie colpostat. The immediate results were good, but at the time of writing this article it was too soon to make a prediction as to later developments.

The diagnosis may be easy or difficult. "Advanced carcinoma, presenting cauliflower-like masses, extensive induration, or perhaps a necrotic crater, presents little diagnostic difficulty." When there is but a small beginning lesion the difficulty is increased. The author places considerable emphasis upon the importance of "an area of induration in the cervix." This area is more easily detected because of the soft surrounding tissue. In such a case a biopsy specimen should be secured.

The maternal prognosis was originally very bad, but the employment of radiotherapy has greatly lessened primary mortality. "The increase in permanent cure has not been as striking as the decrease of primary mortality." In an attempt at delivery per vagina in the presence of advanced carcinoma there is great danger in connection with hemorrhage, sepsis, thrombosis, embolism.

In connection with fetal prognosis, it appears to be the tendency to disregard the life of the fetus except in the case of the patient near the normal time of confinement when "the best results for the child are obtained by abdominal Caesarean section."

In the treatment, sub-total hysterectomy has been advised in order to prevent lochiometria resulting from blockage of the carcinomatous cervix.

Vaginal hysterectomy has been suggested, but does not appear to be a very practical procedure.

It is suggested that in the first trimester there should be a radical hysterectomy without previously evacuating the uterus, and this is to be followed by radial therapy in connection with the suspected area, deep x-ray irradiation being usually employed.

"In the second trimester, if the carcinoma is still operable, radical hysterectomy may be done if the surgical mode of attack is preferred. If irradiation is elected local irradiation by means of radium should be used followed by deep x-ray therapy. The fetus will be destroyed and may be expelled spontaneously later. If this does not occur the uterine body with its contents may be amputated, or if the extent of the lesion permits, complete hysterectomy may be done."

It is suggested that in the last trimester "it is well to wait until the child has attained a development which renders extra-uterine life fairly possible before beginning treatment." When the child is thought to be viable, the uterus is emptied, and a sub-total hysterectomy is done—that is, a Porro operation—followed by radium and x-ray.

COMMENTS

In this connection, my father, Dr. LeRoy Long, has told me about a patient upon whom he operated about 30 years ago. At about the expected time of confinement in her seventh or eighth pregnancy there was a very severe uterine hemorrhage. An examination disclosed an enormous cauliflower-like mass completely obscuring the cervix and entirely filling the greater part of the vagina. Audible heart sounds indicated that the fetus was alive. An abdominal Caesarean section was performed, a living and vigorous child being delivered. The mother recovered from the operation, but soon thereafter there was rapid and relentless advancement, terminating in exhaustion and dissolution several months after the operation.

Wendell Long.

Hyperthyroidism in Children Under Five Years of Age. By George Crile, M. D. and George Crile, Jr., M. D., Cleveland, Ohio. *The American Journal of Surgery* for September, 1937.

The authors report four cases of hyperthyroidism under five years of age, three after thyroidectomy and one after conservative therapy, all recovering.

They feel that hyperthyroidism in children is no different from exophthalmic goiter in the adult and that thyroidectomy is the treatment of choice.

If it is decided to treat a child conservatively (in a mild or early case of hyperthyroidism), it is important to have accurate measurement of the extent of exophthalmus and to advise prompt thyroidectomy if the exophthalmos progresses.

In their experience they do not believe that the mortality rate from operations on children with exophthalmic goiter has been high. In the Cleveland Clinic series only two deaths have occurred in a series of 54 cases of hyperthyroidism in children under fourteen years of age. Since they began using iodine as routine preoperative measure there have been no deaths following thyroidectomy. It is felt that if the patient is adequately prepared for operation and if the post-operative course is carefully managed, there is no reason why thyroidectomy should entail any greater risk in children than in adults. The procedure should be carried out as much as possible under local anesthesia with enough basal anesthesia and gas oxygen analgesia to render the patient cooperative and quiet. After the operation, an adequate carbohydrate intake should be assured and glucose should be given if necessary. In severe cases, it is advisable to administer a solution of ten per cent glucose by means of a continuous intravenous drip.

In normal children the metabolism per unit of body weight is high as compared with adults, and in children with exophthalmic goiter it is extremely high. Children, therefore, tolerate large doses of

sedative drugs without much depression. In one of these cases, that of a two and one-half year old boy, there was no depression of respiration after hypodermic injections of 1-8 grain of morphine sulphate. It is important to remember that children with high metabolic rate oxidize and detoxify drugs with great rapidity and that the usual dosages must be increased if the full therapeutic effect is to be obtained.

Morphine is so necessary as a sedative in these patients who cannot otherwise cooperate that hesitancy in the administration of relatively large doses to children should be overcome and the morphia should be given, not in doses calculated on body weight, but, in accordance with the physiological reaction obtained.

They have found that avertin, in doses of 60 to 100 milligrams per kilogram of body weight, has given satisfactory basal anesthesia in operations for exophthalmic goiter in children. Children with hyperthyroidism require relatively larger doses of avertin in order to obtain a given sedative effect. The two and one-half year old boy dozed for 45 minutes after a dose of 100 milligrams avertin per kilogram of body weight and at the end of this time was asking for candy.

The three most common causes of death following operation for hyperthyroidism are: 1. Pneumonia. 2. Cardiac failure. 3. Thyroid crisis. In children there is little danger of post-operative pneumonia, the myocardium is not affected as is so frequently the case in elderly patients, and auricular fibrillation and cardiac failure are rare complications. The chief danger following operation in children is the development of a thyroid crisis with its attendant vicious circle of hyperthermia and hypermetabolism. Thyroid crisis can usually be modified or averted by the parenteral administration of glucose solution, by adequate sedation with morphia, and by use of oxygen, there is little reason to become unduly alarmed about operating upon children.

They believe that children are better operative risks in the presence of hyperthyroidism than has generally been believed and are inclined to abandon preliminary ligation and multiple stage operation in favor of one stage thyroidectomy which can usually be performed without danger.

LeRoy D. Long, M. D.

Thyroid Disease in the Smaller Hospital. By J. William White, M. D., Scranton, Pennsylvania. *The American Journal of Surgery* for September, 1937.

"Although the major problems of thyroid disease as encountered in the smaller hospital are relatively the same as those met in the larger institution, minor differences in the management of thyroid cases may result in major consequences.

Critical judgment of the merit of any therapeutic measure predicates an intelligent evaluation of the ultimate benefit to the patient; and an appraisal of the results of a method of procedure is best derived from adequate and systematic follow-up studies. A thorough review of case records furnishes a complement of experience that can be attained in no other way. Such review combined with meticulous examination of surviving patients literally brings the thyroid surgeon to judgment.

Provision for follow-up studies is lacking almost universally in smaller hospitals. Professional apathy notwithstanding, there are many obstacles which tend to preclude the issue of reviews from hospitals with fewer than 100 beds. Because of these faulty circumstances, much valuable knowledge is not forthcoming, morbidity and mortality data are

inaccurate and there are many surgeons with an unwitting concept of their work and its results.

The 205 cases reviewed in this study accumulated over a period of thirty years; and although most records were complete a number could not be utilized because much of the necessary information was not recorded. From the details available it was learned that:

The diffuse forms of goiter in both the toxic and non-toxic groups have an earlier age incidence than the nodular forms. The diffuse toxic goiter appears predominantly a decade later than the diffuse non-toxic variety. There is not an appreciable difference in the age incidence of the nodular non-toxic and the nodular toxic goiters. Malignancy of the thyroid gland is most common after the fourth decade of life and it usually follows a pre-existing nodular goiter.

As generally understood, and corroborated in these studies, females are more frequently affected by thyroid disease than males. The sexes are affected equally with cancer of the thyroid gland.

Except for the examples of acute thyrotoxicosis, symptoms are of comparatively long duration, averaging approximately five years. Swelling is the most constant complaint. Pressure is complained of more commonly by toxic patients. Nervousness, palpitation and weight loss are not confined to toxic cases. Exophthalmos is approximately twice as frequent as gastrointestinal complaints in thyrotoxicosis.

Evidence is inconclusive as to any deleterious effects resulting from the various anesthetic agents used in this series.

Preliminary ligation of the thyroid arteries is not an absolutely safe procedure and is increasingly giving way to operative attacks on the gland in one or more stages. Subtotal thyroidectomy is the operation of choice, although single adenomatous nodules may be removed locally.

Postoperative complications are usually of serious consequence and require immediate, often heroic treatment. Complications markedly increase the period of hospitalization. The proper use of iodine pre- and postoperatively in toxic cases greatly reduces the incidence of complications and likewise shortens the period of hospitalization.

The mortality rate in goiter surgery is higher in smaller hospitals. It is presumed that the mortality rate, 5.8 per cent, in this series closely approaches the average for thyroid cases in the smaller institution, a major consequence. The immediate surgical mortality rate in cancer of the thyroid gland is much higher than that of other surgical conditions of the gland.

Surgery offers the greatest probability of cure in both non-toxic and toxic goiter; and should be supplemented with radiation therapy in the treatment of thyroid cancer."

LeRoy D. Long.

UROLOGY

Edited by D. W. Branham, M. D.
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Corbus Ferry Filtrate in the Treatment of Gonorrhea in the Male. Michael Wishengrad, New York, *Urologic and Cutaneous Review*, August, 1937

The author reports the results obtained in a small series of cases (37 acute and 9 chronic) of gonorrhea treated with Corbus Ferry vaccine. Both

large and small dosage of filtrate were given in different series. His conclusions were that Corbus Ferry vaccine in the treatment of gonorrhea is contraindicated, however, in some chronic cases it seemed to be followed by slight benefit. Because of the small number of cases reported the latter findings is somewhat in question and the author suggests further study.

They also noted that complications in the form of epididymitis occurred as often with filtrate treated cases as those treated without the preparation.

As a test of cure this preparation proved of no benefit whatever. Five cases definitely proven positive by a reexamination of the smear obtained from the prostatic secretion as well as that elicited by sound were non-reactive to filtrate.

COMMENT

The above findings coincide closely with those obtained by the majority of urologists having had experience with this preparation. In our hands it not only has proven worthless as far as therapeutic results are concerned, but occasionally has produced harm when administered in acute cases.

Contraindications and Complications Incident To Trans-urethral Prostatic Resection. B. Weems Turner, M. D., Houston, Texas. *The Journal of Urology*, July, 1937.

The author briefly reviews the various factors predisposing to the poor results obtained in prostatic resection. He has critically analyzed 100 cases of prostatic obstruction of the vesical neck treated by him through trans-urethral methods. He has tabulated the various complications met with and he has evaluated the end results obtained by this method. The reasons for the complications arising for resection have been divided under three major headings:

- I. Infection
 - a. Local.
 - b. Remote or circulatory.
- II. Mechanical changes in the operative field following resection.
- III. Hemorrhage
 - a. Immediate.
 - b. Secondary.

Infection was the most usual complication; twenty patients had severe infections with pyelonephritis following the procedure. Post operative hemorrhage occurred in sixteen cases of the series, four were immediate and twelve were secondary.

The author summarizes his experience with this method with the statement that though his results are not entirely pleasing they reflect a true picture and he believes an average one. He feels that the method is attended with many dangers in those who have had little experience is gained its use may be extended to a greater number of cases with lessened difficulty.

COMMENT

This is an extremely honest appraisal of a controversial subject. It is only by such frankly tabulated results that the profession in general may obtain a true evaluation of this procedure.

Carcinoma of the Prostate. John R. Caulk, St. Louis. *Transactions Southwestern Branch of the American Urological*, Omaha, 1936.

A well written article by an urologist of wide experience in which he sums up the practical facts known of this rather prevalent disease. He states that he has never cured a patient of prostatic carcinoma, but has undoubtedly prolonged their

lives with appropriate treatment. He emphasizes early diagnosis by careful rectal palpation of the gland searching for localized or generalized indurations.

The symptoms of prostatic malignancy in most instances result from the obstruction formed by the proliferative tissue at the vesical neck. However, in twenty-two of his cases pain in the back, legs and genitalia from metastatic growths were present.

He cites a few paradoxes regarding the disease: The larger and more malignant the feel the less rapid the growth and the longer the life expectancy; the smaller and more softer, the shorter the life. The older the patient the longer the life expectancy and slower the growth.

Cystoscopic findings were not helpful in most instances except to reveal bladder neck obstruction. So far as treatment is concerned he does not feel that radical operations for various reasons are ever indicated; the same is true of palliative suprapubic cystotomy. He is of the opinion that a combination of radium and deep x-ray therapy in conjunction with transurethral surgical methods for relief of the bladder neck obstructions offer the best method for therapeutic control of this condition.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Treatment of Caustic Burns of the Eye. William B. Hubbard, M. D., Flint, Mich. Archives of Ophthalmology, August, 1937.

Cowan and Sinclair's statistical report of blindness in the state of Pennsylvania shows that blindness due to chemical burns is of greater frequency than that due to detached retina.

Clinical observation alone does not enable one to advise as to treatment. Experimental work is necessary. Factors to be considered are: (a) the time that has elapsed before the initial treatment, (b) the amount of the caustic causing the burn, (c) the type of the caustic, (d) the strength of the caustic and (e) the type of treatment.

In the author's previous report (1928) on caustic burns "it was found that, regardless of the concentration of a chemical or of the interval of time before treatment, the proper treatment was to irrigate the eye with water rather than to attempt neutralization." Irreparable damage is done with any concentration of caustic after a certain length of time.

The author suggests that advocates of the neutralization should be very sure of themselves, for advising this form of treatment, for so many times, it is advising practically no emergency treatment for by the time the neutralizing solution is prepared great damage has already been done.

Rabbits were used experimentally. Sulfuric acid was used as the typical acid (32 per cent.) Sodium hydroxide solution was used as the typical alkali (20 per cent.) After these were dropped in the eyes of rabbits, with the aid of two trained assistants, the sulfuric acid was allowed to act for thirty seconds and the sodium hydroxide for ten seconds. Neutralizing solutions used were two per cent. sodium bicarbonate and two per cent acetic acid.

Hubbard found that "between 80 and 100 per cent of the acid burns treated by irrigation with a weak alkali were definitely worse than the acid burn of the opposite eye treated by irrigation with water alone. Seventy-five per cent of the alkali

burns treated by irrigation with a weak acid were definitely better than the alkali burn of the opposite eye treated by irrigation with water alone."

Photographs accompany the article showing the eyes twenty-two days after the experiment.

A Method of Closing a Pharyngeal Fistula Following Laryngectomy. Charles J. Imperatori, M. D., New York. Archives of Otolaryngology, August, 1937.

Any opening into the pharynx going through the tissues of the neck may result in a fistula.

Removal of the larynx or transhyoid approach to the inside of the pharynx may occasion this result. These fistulas occur in the region of the base of the tongue or in the tonsillar area. When the straight line incision is used pharyngeal fistula are not so apt to follow. With the aid of plastic surgery these usually close spontaneously.

The presence of an infection which devitalizes the tissues prevents closure of the wound. When irradiation has been used before operation, union rarely occurs spontaneously and if it does, a long period of time is required. Attempts to reunite irradiated tissues usually result in failure. The author's histologic studies of such tissues show structural change of the epidermis and derma with muscular tissue atrophy.

The two principles the author has used in rebuilding the outer pharyngeal wall are:

1. The fistula must be covered by a flap, slid and swung from neighboring tissue as far from the fistula as such a skin flap can be made without too much resulting deformity. Tube grafts may be used, but it was not found necessary in the two cases reported. New edges must be approximated.
2. Swallowing must be abolished as much as possible. This prevents the disturbance of the approximated edges and also prevents the injection of saliva into the edges. This is accomplished by the use of tube feeding and by suction or drainage by gauze to remove the saliva from the mouth.

Two microphotographs are reproduced, one showing the histology of normal skin, and the other showing histologic changes in a chronic roentgen ray dermatitis.

There are two case reports given.

Several illustrations, nicely done, accompany the article. These illustrate the different steps in the suggested method of closure of pharyngeal fistula.

An Investigation Into the Theories on the Formation and Exit of the Intra-Ocular Fluids. J. Douglas Robertson, M. D., London, W. I. The British Journal of Ophthalmology, August, 1937.

This is a forty-five page report on the author's investigation which does not lend itself well to abstracting.

The report is given under three main divisions. First under Historical there is given, the theories of the aqueous formation; the theory of dialysis based on I Chemical equilibrium, II Chemistry of abnormal or plasmoid aqueous, III Osmotic pressure, and IV Relation between osmotic pressure of aqueous and blood.

Second under Experimental there is given: I Interchange of fluid after intravenous 15 per cent. aqueous gum; II Interchange of fluid after haemorrhage and intravenous 6 per cent. gum saline; III Interchange of fluid after haemorrhage and intravenous 15 per cent. gum; IV Interchange

of fluid after haemorrhage and intravenous 0.9 per cent. saline.

Third under Discussion there is given: The circulation of the aqueous; The theory of dialysation—I Question of expenditure of energy, II The chemical equilibrium (a) Non electrolytes (b) Electrolytes, III Chemistry of abnormal and plasmod aqueous, IV Osmotic equilibrium, V The relation between the intra-ocular pressure and the osmotic pressure of the plasma, (a) After intravenous hypotonic, hypertonic and isotonic crystalloid injections, (b) After colloid injections, (c) Injections after haemorrhage; The relation between oedema and the intra-ocular pressure; The Canal of Schlemm—Structure—Pressure—Connections—Pressure relationships; Functions of Canal of Schlemm—Removal of aqueous by (a) Pressure filtration (b) Osmotic attraction (c) Safety-valve mechanism and (d) active absorption.

There is a large bibliography appended.

Summarizing and concluding the author states: "The views put forward in favour of dialysis for the production of the intra-ocular fluids have been carefully investigated, and it is suggested that the evidence is unconvincing.

There is ample evidence to show that in the production of the aqueous humour there must be an expenditure of energy in the posterior chamber, for the membrane through which fluid passes into the chamber to become aqueous has an irreversible permeability.

There is evidence to show that there is no chemical equilibrium between the blood and aqueous humour. Easily diffusible constituents such as urea, sugar, uric acid, are not present in equal concentrations in blood compared with the corresponding aqueous.

There is evidence that a physical equilibrium does not exist between blood and aqueous and that the equilibrium level of the intra-ocular pressure is not maintained by the hydrostatic force in the capillaries minus the difference in osmotic pressure between the aqueous and blood.

It is suggested that the evidence chemical, hydrostatic and osmotic points to the formation of the aqueous humour by a process of secretion and in addition there is evidence of the necessity for the expenditure of energy in its formation.

The formation of aqueous humour is held to take place by a process of secretion at the ciliary body, and this fluid to move forward to the angle of the anterior chamber and to be actively absorbed into the canal of Schlemm by some process other than osmosis.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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Treatment of Tuberculosis of the Elbow by Resection and Arthroplastic Operation in One Seance. Ragnar Magnusson. *Acta Orthopaedica Scandinavica*, VII, 325, 1936.

Combined resection and arthroplasty was performed in seventeen cases of tuberculosis of the elbow. Abscesses and fistulae were cleaned up at the time of the operation and were not considered a contra-indication. The synovia and all tuberculous material were cut away and a piece of fascia lata was inserted. Motion was started in from two to three weeks and resistance exercises soon thereafter. Massage was not given.

Questionnaires or follow-up examination in six-

teen cases showed ankylosis in one and mobility in the remainder. Twelve patients were able to work as maids and seamstresses, and one patient, as a timber floater. All wounds remained healed after the patients left the hospital except for one case in which a fistula formed. Only four patients had occasional pain. The results were better in the cases operated on early in the disease.

Myositis Ossificans. M. H. Hobart. *American Journal of Surgery*, XXXIV, 227, 1936.

Two types of this condition are described as deposition of bone in muscles or about their insertions, namely, progressive, which usually begins in the muscles along the spine and gradually spreads to all muscles of the body with interference with respiration, and the circumscribed, which is usually confined to one muscle or locality, and, if caused by trauma, may spread more rapidly to reach its maximum degree of involvement.

The theories as to the cause are implantation of periosteum in muscle, or the escape of osteogenic cells from the periosteum, or ossifying hematoma, or metaplasia. It is usually considered that trauma, either mild or severe, in the form of repeated injury, dislocations about a joint, or variations in the treatment of fractures, is a factor in all cases. The more common sites are the brachialis anticus and the quadriceps femoris muscles.

There is a degeneration of muscle fibers, from the pathological standpoint, with infiltration of fibrous tissues, cartilage cells, and normal appearing bone, which may or may not be attached to the bone beneath. The usual symptoms are interference with function, less often pain, and a mass in the muscle becoming larger and firmer, with roentgenographic evidence of shadow, usually seen three or four weeks after injury.

Prognosis is generally good except in cases in which a joint is involved; if such cases are neglected or improperly treated, interference with function may result. Early treatment usually consists of rest, preferably in a cast; in the case of the elbow, stress is laid upon the flexion position to prevent the formation of a mass in the cubital fossa. By the time the diagnosis is made, heat is usually indicated either in the form of diathermy or hydrotherapy. Surgical interference is indicated only if pain is continued or if function is interfered with, and, in some instances, in order to differentiate from tumor. Quiescent cases should not be disturbed. Nine cases are reported in detail.

Earl D. McBride, M.D., F.A.C.S.

Glosso-Pharyngeal Neuralgia. Professor Henry Sohen. *Liverpool. The Journal of Laryngology and Otology*, August, 1937.

This site and pathology of the lesion must be included in a diagnosis of a nervous system disease.

Pain may be referred to the peripheral distribution of a sensory nerve so we may expect neuralgias associated with any sensory spinal nerve, and with the Vth (trigeminal) and IXth (glosso-pharyngeal) cranial nerves. Rarely the VIIth (geniculate herpes) and the Xth (superior laryngeal neuralgia) are affected.

Recognition of a neuralgia should not be difficult if the observer has a detailed knowledge of anatomy and the patient describes the site of the pain accurately.

Etiologically there are two groups: 1. Those in which a gross pathological lesion involves the nerve (a tumour, inflammatory exudate, haemorrhage, neuritis, etc.) and those which occur in the absence of any demonstrable pathology even when the pa-

tient is observed over a long period of time. The author classifies the former as secondary neuralgias and latter as primary neuralgias.

The author's classification of the clinical characteristics of the primary neuralgias are:

- (1) The pain is paroxysmal, occurring as stabbing, shocklike thrusts, excruciatingly severe, but of short duration lasting only seconds, and separated by intervals of complete freedom from pain, though of profound apprehension of its return;
- (2) stimulation of certain defined points known as "trigger zones" will precipitate paroxysms of pain;
- (3) there is an absence of any clinical evidence of loss of function of the nerve; there is no objective sensory disturbance, no motor or secretory change except those which may be reflexly produced during the paroxysm; occasionally trophic changes occur but it is doubtful if these result directly from neurotrophic influence;
- (4) the pain recurs at intervals over a period of many years without there being any evidence of spread to neighboring nerves; and
- (5) the onset is usually in middle or old age.

The author's classification of the clinical characteristics of the secondary neuralgias are:

- (1) a pain of a boring, aching type which is constantly present, though subject to exacerbations;
- (2) the pain is accompanied by objective evidence of nerve involvement, e. g. anaesthesia, reflex change, muscle wasting, etc.
- (3) evidence of progressive involvement of neighbouring structures tends to appear; and
- (4) no age is immune.

The most common site of primary neuralgia is along the distribution of the trigeminal nerve (so-called tic douloureux.)

A diagrammatic sketch shows the distribution of the glosso-pharyngeal nerve which the author explains in detail.

Cases are reported illustrating both primary and secondary glosso-pharyngeal neuralgias.

Medical treatment of primary glosso-pharyngeal neuralgia is discussed. The author's opinion is that the correct treatment is essentially surgical and all others are simply palliative.

The phenomena of a transient rise of blood pressure following section of the glosso-pharyngeal nerve is explained.

One of the concluding statements is that the absence of pain does not exclude irritation of a sensory nerve.

THE TRAINING OF MEDICAL TECHNOLOGISTS

(Paper read by Dr. Phillip Hillkowitz, Chairman of the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists, before the Oklahoma Society of Medical Technologists, Oklahoma City, April 24, 1937.)

The use of the laboratory as an aid to diagnosis and treatment of disease necessarily brought with it the resort to physicians who, by virtue of special study and experience, engaged in this specialty of using and evaluating laboratory methods. In the course of development these workers became known as clinical pathologists. In the early days they personally performed all the tests and even attended to the drudgery of cleaning their glassware and apparatus. The writer can testify to this ple-

bian task in his own experience in the course of evolution of this field of medicine.

With the increase of the work and the expansion of routine laboratory methods to the hospitals it soon became apparent that lay help was necessary. And so arose the calling of the clinical laboratory technician now known by the more euphonious name of medical technologist.

There was no check up on the qualifications of laboratory workers. Many with but a smattering of the subject held down responsible positions, regardless of the fact that their findings spelt the weal and woe of the patients. The scientific as well as the social status of the worker was at a low ebb. The inferior esteem in which they were held by their fellow hospital employees may be gauged by the unwillingness of nurses to have them sit at their table in the dining room. In short, chaos reigned supreme in the field of laboratory aids.

Then came salvation when in 1928 the Registry of Medical Technologists was established by the American Society of Clinical Pathologists. The members of this Society, deeply cognizant of the necessity for well trained laboratory workers not only for themselves but for hospital and practitioners of medicine, inaugurated the system of giving certificates of proficiency to those workers who passed muster and eliminating the unfit from the ranks of those aspiring to this important calling.

This is not the place to dilate on the tremendous change the registry has wrought in this noble profession, a revolution as real and as far reaching as that effected by Florence Nightingale in the allied profession of nursing. The subject of this paper being limited to training we may well take up the second scope of the Registry of Medical Technologists of the American Society of Clinical Pathologists, namely, to insure for the future the creation and growth of a class of laboratory workers able by education and practical experience to carry out properly the intricate tests now required in the modern practice of medicine. To bring this about the Board of Registry has gradually raised the standards giving ample time for hospitals as well as students to adjust themselves to the new requirements.

The first point of attack was the preliminary education of the students. Originally a high school diploma was considered sufficient. It soon became apparent that this requisite was deplorably inadequate. Aside from the fact that high schools differed markedly in their basic teaching, the amount of knowledge in the natural sciences absorbed by these graduates was very meager or even nil. It seemed a woeful waste of valuable time to spend energy on teaching students the bare fundamentals of chemistry and biology before they comprehend even the ordinary laboratory tests. To have them carry out procedures parrot-like without knowing the reason why would be producing mere automatons or robots, as we find in industry, without any initiative or resourcefulness.

In view of the thousands of young women and men who graduate annually from the science departments of our colleges and universities, without finding a ready means to utilize their knowledge in earning a living, it was but logical to utilize this talent, thirsty for a profitable vocation, and divert them into the channel of laboratory technique. Accordingly the Registry proceeding with due caution announced as a prerequisite the completion of a year of college including courses in chemistry and biology. This reasonable minimum met with a practically unanimous favorable response by clinical pathologists and training schools. A few dissenting voices were heard which based their objec-

tions on the valid thesis that college education per se is no index of brain capacity or intelligence. It is readily admitted that geniuses or supermen may arise from the ranks who have had no college education but it does not vitiate the fact that the only criterion we can go by is a grounding in the fundamentals—the same touchstone that is used by the medical and other professions.

The registry is now ready to proceed with the next step in the evolution of technical training promised sometime ago. Beginning with 1938 a minimum of two years at college will be required with emphasis on the basic sciences of chemistry and biology.

We can foresee the time when this will be extended to a complete college course. As a proof that events are shaping themselves in this direction may be cited the number of approved schools that have voluntarily established this high requirement. To save an additional year a number of schools are giving the degree of Bachelor of Science in Medical Technology to students who have pursued three years of pretraining curriculum on the campus and the fourth in practical hospital work under the direction of a recognized clinical pathologist.

Now as to the technical training proper: the Registry has set a minimum of twelve months' practical instruction in a school approved by the registry. For the present the apprenticeship system under proper auspices, i. e., a qualified clinical pathologist with adequate hospital affiliations is still valid. Until ample facilities are afforded by existing schools to take care of all applicants, instruction of one or two apprentices by the individual clinical pathologist may still be necessary. The time is not far distant, however, when all aspirants for training will obtain these courses under the aegis of a university or college of learning with its concomitant academic and scientific atmosphere and inspiration. Naturally the strictly technical courses will be conducted in the hospitals affiliated with these institutions where the students come in direct contact with the patients, away from the cloistered life of the university proper and are compelled to come face to face with the prosaic facts of a cold world.

Another glaring virtue of the four or five year school is the elimination in the first year of those students who either by temperament or lack of endowment will not make good technicians, thus saving wasteful trial and error methods. Much is expected of the properly trained medical technologist besides scientific and technical attainments; unimpeachable integrity, evenness of temper, happy disposition, cooperativeness, neatness and a host of other admirable qualities not realizable in practice in a poor human being with all the frailties that flesh is heir to.

At the present time the registry has on its rolls one hundred fifteen approved schools spread over the entire United States where students may secure the desired proficiency in this calling. Ever since the inception of the Registry a militant battle has been waged against the so-called commercial schools who from mercenary motives and by the aid of highly colored prospectuses were luring unwary students to their ill-equipped and poorly staffed quarters charging exorbitant tuition fees and leaving them in the end tragic dupes unable to obtain employment. Fortunately this vicious type of exploiting school has virtually been eliminated thanks to the publicity instituted by the registry and the cooperation of hospitals in shutting their doors against their graduates.

A powerful ally in strengthening the standards of training schools is the Council on Medical Education and Hospitals of the American Medical Association. The great resources of this efficiently manned department in the investigation of medical schools and of hospitals for approval of interne training have been freely lent to the Registry in the personal inspection of training schools by members of their staff. The Council and the Registry jointly and in mutual consultation pass on the competence of schools and of their directors to carry out efficiently their function.

Judging from its rapid progress and successful advancement in the past, the future offers a rosy picture of a stabilized yet dynamic system of technique side of its older sister schools in the learned arts.

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The Infant and Child as a Urologic Problem*

E. HALSELL FITE, M.D.
MUSKOGEE, OKLA.

The problem presented by urology in children and infants is a very real and very important one since many of the conditions which first manifest themselves in the patient at an early age become in later life very serious urological problems. These conditions, if recognized when they first cause symptoms, often lend themselves to treatment, while if they go untreated for a time they result in the loss of a kidney or a life. The problem, however, is not one of easy solution since in infants the patient cannot give a history or make a complaint and in children the history is often misleading and meagre. The symptoms indicating urologic conditions also are not the most clear or self evident. Furthermore, seldom is the patient first seen by a urologist and the burden of recognizing that the symptoms are urological rests with the pediatrician and general practitioner and, therefore, these men must be informed of the significance of the urologic symptoms or they may fail many times in the carrying out of their duty toward these young patients.

The most common symptoms of urologic conditions bringing the patient for examination are swellings or tumors or unexplained fevers. The swellings are usually noted in the hypogastrium or flanks by the mother or nurse in giving the child a bath or otherwise caring for it. Sometimes there is only the history of having seen or felt a tumor which is not present on ex-

amination. In case of unexplained fever a urinalysis should always be done as kidney infection is one of the commonest causes of fever in children. Other symptoms and signs of urologic disease are hematuria, chronic pyuria, unusual urinary output, straining at urination and pain at urination manifested by crying during the act. A very important symptom also is the unexplained gastrointestinal upset.

Any of these symptoms though present in only a mild degree may be the sign of severe urologic pathology. The statistics of those who have examined thousands of children show that urological disorders are not rare in infants and children and that children have pretty much the same diseases of the urologic system that adults have with the exception of tumors of the bladder and lower urinary tract. The urologic system is the seat of anomalous development very often and as it is an excretory system these anomalies often cause obstruction or faulty drainage. Therefore, as would be expected, much of the urology of children is the urology of anomalous development in the urinary tract.

In considering the problem of child urology one is immediately faced with the problem of what kind of examination should be made and what are the indications for these examinations. Certainly all authorities are agreed that the indiscriminate use of complete urologic examinations is to be frowned upon and that any one so doing is not acting to the best in-

*Read before the Section on General Surgery, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

terests of his patients. On the other hand there exists in many quarters an apparently altogether unwarranted fear of severe reactions following cystoscopy and pyelograms in children and infants. Campbell¹ states that in his rather large experience with cystoscopic examinations in children that following observation cystoscopy the reactions are almost nil, perhaps urethral irritation for a few hours or a day, and that following complete urologic study the reactions were less than half as often in children as in adults and much less severe. From my rather limited experience I have obtained much the same impression and where I feel that urologic study is indicated I do not hesitate because the patient is an infant or child.

The indications for a thorough urologic examination are as follows: Chronic pyuria, repeated or persistent acute urinary infection, disturbances of urination, certain abdominal pains and gastro intestinal upsets not accompanied by diarrhea, tumors in the flanks or hypogastriac region and hematuria not due to hemorrhagic nephritis or other general hemorrhagic disease. I will only discuss these briefly as a thorough discussion is not within the scope of this paper.

Pyuria: All cases of pyuria which persist following three or four weeks of intensive treatment should have a thorough urologic study. Campbell advises a month of treatment with large doses of methanamine and ammonium chloride sufficient to produce a p H of 5.5 or more as a test for urologic study. He states that this is better than ketogenic diet treatment and, I presume, mandelic acid treatment, as if the pyuria and bacilluria clears up under the methanamine treatment "one is almost safe in assuming that no important obstruction exists," while the other treatment will clear up infection temporarily even in the face of grave urinary obstruction which should be relieved.

Repeated or persistent acute infection: If a patient has repeated attacks of acute urinary infection even though these attacks clear up readily under treatment I consider it an indication for urologic examination. An acute urinary infection which does not begin to clear up after five

to seven days of forced fluids and urinary antiseptics also constitutes an indication for examination. The causes for both the chronic and acute urinary infections are so numerous that to name them would be to catalogue most of the urinary diseases affecting the urinary tract from the urinary meatus to the kidney.

Disturbances of Urination: Frequently is a common symptom in almost any type of urinary irritation or infection, but when it persists over a long period it is apt to be due to some serious condition in the urinary tract.

Straining or difficulty in urinating usually means some obstruction at or below the bladder neck or some neurologic condition in the bladder.

Incontinence is usually due to neurologic conditions of the bladder or anomalies. Paradoxical incontinence may occur where there is obstruction to urinary outflow at or below the bladder neck. Where this exists there will be the large overdistended bladder.

Eneuresis is a most troublesome problem and I believe that where it exists in a patient over five a thorough urinary study should be made. Statistics show that a very large percent of these cases have some underlying pathology.

Abdominal Pain and Gastro-Intestinal Upsets: Not infrequently patients are seen with the diagnosis elsewhere of appendicitis in which the history is not typical of the condition nor is it typical of any condition. However, a careful study of these cases will throw a large percent of them into the urologic group. Nausea, vomiting and loss of appetite are frequent symptoms of kidney pathology.

Tumors: Masses in the flanks either unilateral or bilateral are apt to be due to hydronephroses, polycystic kidneys or malignant tumors of the kidney. Hydro-nephroses are smooth cystic-feeling tumors which may be constant or may appear and disappear from time to time. Polycystic kidneys are apt to be bilateral. In this condition the family history is important as the condition is recognized to often be inherited or peculiar to certain families. The most frequent new growth



(PLATE NO. I)

of the kidney in infants and children is the highly malignant Wilms tumor.

Masses in the hypogastrium are usually caused by distended bladders due to some obstruction at or below the neck of the bladder or to the neurologic bladder.

Hematuria: The causes of hematuria are like those of infection so numerous that I will not attempt to enumerate them. However, where hemorrhagic nephritis or the systemic hemorrhagic diseases can be ruled out, hematuria should always constitute an indication for thorough urinary study. Often hematuria is the first symptom of a Wilms tumor.

The urinary examination need not always consist of a complete urinary examination. Sometimes an observation cystoscopy, a flat g. u. plate or an intravenous pyelogram together with the history, physical and laboratory data will enable one to make a diagnosis. The following cases illustrate different types of examination and diagnosis:

CASE NO. I.

A white girl eleven years of age had been taken ten days before with a pain in the right costo-vertebral angle radiating around to the front and down toward the bladder region. There was no frequency, hematuria or dysuria. A doctor in the country diagnosed the case as muscular sprain. She, however, began having chills every day, so another doctor was called who said she had appendicitis, and the father decided to bring her to the Fite Clinic for operation.

On going into the past history she was found to have had attacks of pain in the right costo-vertebral angle every two or three weeks for three years.

Physical examination showed marked tenderness and rigidity in the right costo-vertebral angle and right lumbar region. The urine was loaded with pus and colon bacilli.

A cystoscopy with pyelograms was done. The urine from the right kidney was loaded with pus and colon bacilli. The pyelogram (Plate No. I) showed a dilated ureter and kidney pelvis and stricture of the ureter near the bladder.

The patient was treated by an indwelling ureteral catheter and mandilic acid regime and made a rapid recovery.

Here the pain was typically a kidney pain from the first and should not have



(PLATE NO. II)



(PLATE NO. III)

been confused with appendicitis. Furthermore the chills are not often seen in appendicitis and are typical of urinary infection with insufficient drainage. The cystoscopy with catheterization of the ureter, cystoscopic urine specimen and pyelogram clinched the diagnosis.

CASE NO. II.

A white boy, age 13, referred to the Crippled Children Clinic for appendicitis. He had been sick five days with a pain, dull aching in character, which developed gradually in the right side of the abdomen, and which was unaccompanied by nausea and vomiting. He gave a recent history of several furuncles.

Pressure over the right costo-vertebral angle elicited some tenderness. He was quite tender over the right side of the abdomen. His temperature on admission was 99.6 though his mother said it had apparently been higher.

Leucocyte count was 18,000. Urine was negative. A flat g. u. plate (Plate No II) showed the right proas line obliterated and the spine bending slightly toward the right. A diagnosis of right perinephritic abscess was made and operation advised.

Operation. A small right perinephritic abscess was drained under spinal anaesthesia.

Culture from the abscess showed a pure

culture of a hemolytic staphylococcus aureus.

Here a history of sepsis coupled with tenderness in the right costo-vertebral angle and the high white count pointed to a septic process in the right kidney region. The negative urine ruled out pyelitis and the X-ray evidence of a septic process about the right kidney made cystoscopy unnecessary unless to confirm the suspected negative findings.

CASE NO. III.

An eleven year old girl developed acute pain of a rather indefinite nature over the lower abdomen. She was seen by a pediatrician who diagnosed her case as appendicitis but the surgeon advised a urologic examination. The general physical was negative except for tenderness in the left lower quadrant and in the left costo-vertebral angle.

Urinalysis was negative. White blood cell count was 8,600.

An intravenous pyelogram (Plate No. III*) was done, which showed a hydroureter and mild hydronephrosis on the left, apparently due to a stricture of the ureter in the juxta-vesical portion. This stricture was dilated cystoscopically and the patient has had no further trouble.

Here a negative urine and relatively normal white count ruled out infection in



(PLATE NO. IV)



(PLATE NO. V)

the urinary tract or elsewhere and an intravenous pyelogram was sufficient to make a presumptive diagnosis of stricture of the ureter which was found at cystoscopy. If the function of the kidney had been poor the intravenous pyelogram would probably not have given sufficiently clear pictures for diagnosis and a retrograde pyelogram would have had to have been made. This is one of the weak points of intravenous pyelography.

CASE No. IV.

A white child, four years of age, was first seen because the day before admission he had an attack of abdominal pain and the mother noticed a large mass in the right hypochondrium. For nearly three years he had had attacks of pain in the abdomen accompanied by nausea, vomiting and high temperature.

Physical examination showed a large tense mass in the right upper quadrant of the abdomen. The mass felt definitely like a cyst.

The urine showed two plus albumen, 5-6 red blood cells and 15-20 w. b. c. Stained smear showed colon bacilli. The flat genito-urinary plate showed a very large right kidney shadow and a large left kidney shadow. A right pyelogram (Plate No. IV*) showed a huge right hydronephrosis. Intravenous urography (Plate No. V*)

showed no function on the right and a huge ptosed hydronephrosis on the left. The mass in the right hypochondrium subsided following the pyelogram, the passage of the catheter apparently having established drainage. As the left kidney was the best and practically the only kidney it was operated upon. A very tightly coiled congenital stricture of the ureter was found at the uretero-pelvic juncture. The kidney was suspended and the stricture portion of the ureter removed, the ureter being reimplanted into the kidney pelvis. The result was satisfactory. (Plates VI, VII, VIII and IX).

Here because of the size of the patient only one kidney was catheterized at first and a huge hydronephrosis found. In order to be sure the left kidney had satisfactory function an intravenous pyelogram was done which proved that the operative procedure was needed first on the left to establish satisfactory drainage rather than on the right for removal of the functionless right kidney.

CASE No. V.

A twelve year old girl who gave a history of attacks of frequency and burning since she was a baby. She had enuresis and sometimes in the day her urine "got away from her" and she wet herself. She had had no fever or chills. She was found to be a bright cooperative child.

The general physical was negative. On



(PLATE NO. VI)

inspection of the vulva the urethral meatus was found to be large and patulous.

Urinalysis showed only one or two w. b. c. per hpf. but the urine was loaded with colon bacilli. A complete urinary study was advised and performed. The urethra proved to be large throughout though possessing a good external sphincter. About the bladder neck was some inflammation and a number of small inflammatory polyps. The kidneys were found to be normal functionally and pyelographically, but colon bacilli were grown from both kidney urines.

The patient was put an mandelic acid treatment and the urine became sterile and all symptoms disappeared. The polyps are still present, however, and are to be fulgurated at an early date.

Here the patient had an abnormally large urethra through which she probably received infection of the bladder neck while still a baby and wearing diapers. This has persisted ever since in mild chronic form. This mode of infection is probably common in females.

A complete urologic study was neces-

sary here to determine the nature and extent of the condition.

CASE No. VI.

A ten year old girl came in complaining of attacks of pain in both costo-vertebral angles over a period of about three months. She had slight day-frequency and had to get up two or three times a night. Her doctor found she was running a slight temperature and had pus in the urine on several examinations.

The general physical examination was negative. The urinalysis showed one plus albumen, four or five w. b. c. and was loaded with colon bacilli. The right kidney was found to be functionless, the pyelogram showed a very small pelvis (plate X) with what we interpreted to be a hypoplastic kidney. Washings from the pelvis showed it also to be infected with the colon bacillus.

Following several pelvic lavages and treatment by methanamine the infection cleared up as did also the symptoms.

Here the persistent pain and bacilluria indicated a complete urinary study which enabled us to find a serious anomaly of the urinary tract. Intravenous pyelograms



(PLATE NOS. VII, VIII AND IX)



(PLATE NO. X.)

would have only showed the absence of function of the right kidney and nothing would have been known of the infection present or the presence of the anomaly.

CASE NO. VII.

A boy four years of age was brought in with the history that a week before he



(PLATE NO. XI)

felt sick, turned pale, and a swelling was noticed in the abdomen. Since then he had

not felt well and his appetite had been poor.

Physical examination showed a large tumor in the right side of the abdomen extending down to the ilium and over to the mid-line.

The urine was loaded with blood.

A complete urinary study was made. The left kidney was found to be normal. The right pyelogram (Plate XI) showed a very large kidney shadow with the lower calyx very much elongated and distorted. A diagnosis of Wilms tumor of the kidney was made. This was proved at operation. The patient died one month following nephrectomy in spite of the fact that he received X-ray therapy.

Here either the tumor or the hematuria was justification for an immediate complete urinary study.

SUMMARY

In this paper I have endeavored to point out the necessity to be always on the alert for urologic disease in infants and children. I have called attention to some of the urinary symptoms and to the indications for urinary study and I have attempted to overcome that tendency which is so prevalent in the profession to treat these urologic symptoms palliatively rather than to send the children for careful urologic study and diagnosis. While it may be more troublesome and tedious to cystoscope a child they stand the procedure better than adults.

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Serologic Antibodies Against Hormones

Julius Bauer, Vienna, Austria (*Journal A. M. A.*, Oct. 20, 1937), observed that a prolonged treatment of rabbits with injections of thyroxine leads to a resistance of these animals against thyroxine and to the appearance of serologic antibodies detectable by the complement fixation reaction. A prolonged treatment of rabbits with diiodotyrosine, epinephrine and frequently also insulin and phenol is followed by the appearance of serologic antibodies detectable by the complement fixation reaction. Most patients with hyperthyroidism give the same positive serum reaction, whereas in other individuals this reaction is negative as a rule. The complement fixation reaction is to be obtained in almost the same way with different antigens: thyroxine, diiodotyrosine, epinephrine, sympatol, insulin, tyrosine and phenol. Alanine has been found to give a negative reaction if used as antigen. Three patients with spontaneous hypoglycemia gave a positive reaction, one of them with only insulin as antigen.

Ocular Muscle Imbalance Following Head Injury*

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We are reminded almost daily by the public press of the increasing number of head injuries following automobile accidents; medical journals contain numerous fine articles on newer methods of their treatment and all of us are seeing more of these cases in our own practice. Dr. Haralson spoke before this section in 1931 about eye complications following head injuries and stressed the importance of closer co-operation between the general surgeon and the ophthalmologist in their treatment. I wish to speak here of a condition found in the case of head injury after the patient has recovered from the acute injury, in other words, one of the sequelae of this type of injury. A majority of patients who have sustained a head injury will present a syndrome after a matter of weeks or months including one or more of the following symptoms; headache, dizziness, insomnia, irritability, restlessness, hyper-hydrosis, difficulty in concentration, change in personality, increased fatigue, worry, and depression.

During the past ten months, I have had the opportunity of caring for six cases of severe head injury which were examined to determine the cause of complaints relative to the eyes. From a study of these cases, I wish to present a few observations relative to the occurrence of non-paralytic ocular muscle imbalance following severe head injury. Glaser and Shafer, in 1932, made an exhaustive study of the end-results in 255 cases of head injury. In speaking of the cases with eye complaints they said, "Nineteen per cent of our entire number of patients had symptoms referable to extra-ocular muscle nerves (III-IV-VI) whereas only seven percent demonstrated positive neurologic signs. Some of these people had errors of refraction which, when corrected, relieved a small proportion of their symptoms. The major-

ity, however, were not relieved, and their eye symptoms could be explained only by an associated neurosis." Is it not possible that some of those placed in the neurosis group could have been suffering from non-paralytic muscle imbalance?

The first step in the examination of a patient with eye complaints following a head injury should be to rule out actual paralysis or paresis of one or more of the extra-ocular muscles. Primary deviation if present is noted and this finding helps in determining the paralytic nature of the disturbance. Coupled with the primary deviation, any limitation of motion in the field of greatest activity of the affected muscle is carefully charted. A history of diplopia, apparent to the patient, is of great help, and in the examination, use of the red glass test will prove its presence or absence. If found, the examination should include a plotting of the diplopia fields to determine the field of greatest vertical or horizontal diplopia, and this in conjunction with the above findings aids in making the diagnosis of the actual muscle or muscles involved. These three conditions being absent, we must seek further for the difficulty and proceed to take the muscle balance of the patient.

The cover test is quickly and easily performed and gives us valuable information as to the state of the muscle balance. Many examiners measure the amount of deviation under cover by means of prisms, the amount of prism necessary to neutralize the jump being the measurement of the deviation. Others prefer to use the Maddox rod and rotating prism. The important point is that some method be used where actual measurement of the deviation can be routinely made and recorded. Both horizontal and vertical deviations should be measured, for the near point as well as at distance. In making measurements for vertical deviations I have found the method described by Appleman for uncov-

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Tulsa, May, 1937.

ering latent hyperphoria to be well worth while, especially in the type of case under discussion. After finding hyperphoria at distance, estimation of the amount at the near point is then made. In a majority of instances, this is found to exceed that at twenty feet. With the prism in place which fully corrected the hyperphoria at near the patient is directed to again look at the muscle light at twenty feet distance. An over-correction will be noted, and upon gradually reducing the amount of prism, when the streak again cuts the light, from one-third to one-half more hyperphoria will be shown at distance than at the first determination. This observation has been repeatedly found to be true and it has been helpful in all cases of hyperphoria.

The ductions should also be recorded for both near and distance to determine the fusion amplitude. These, in relation to the type of phoria present give us our best insight to the patient's difficulty.

In analyzing these case histories, a striking point is the delayed onset of symptoms of the muscle imbalance following the original injury. It is often three to six months after the injury before the phoria causes the patient discomfort. For this reason, prognosis of disability must be guarded and we must not dismiss the head injury case from observation as soon as the acute phase is over nor label him "neurotic" when he returns with complaints. The predominating complaints included blurring of vision after short periods of reading, severe headache following close work, dizziness and vertigo. Diplopia was not apparent to any of the patients found to be suffering from a non-paralytic type of imbalance.

High degrees of exophoria were found in all cases, and in two cases hyperphoria was found. Exophoria increased for near in every case.

The treatment of these cases of exophoria following head injury does not vary from measures used to control the condition in other patients. Retinoscopy under complete cycloplegia should be done in every case and adequate correction prescribed if found necessary. Exophoria can result from myopia, due to a disturbance in the accommodation-convergence ratio, known as accommodative exophoria; or it

may become apparent in the early presbyope, the presbyopic type. Proper correction in these cases aid the exophoria, but none of the six cases mentioned above were of the accommodative or presbyopic type. The use of prisms, either incorporated in the correction or used as slip-overs, find their greatest use in controlling the vertical phorias. It is important, however, to delay their use until the neuro-muscular system can become stabilized by further measures and for this reason the use of slip-over prisms as a "hook-front" for use at close work has a distinct advantage.

Exophoria responds to orthoptic training better than any other type of heterophoria. It has an important place in the treatment of this condition and is by far the best method of giving these patients comfort and relief. Its effects are lasting and beneficial if properly and persistently carried out and can reduce this disability to a negligible point. Use the method of your choice, but use it for a sufficient period of time to get permanent results. Prism exercises, base out, or use of one of the optical instruments for orthoptic training, require persistence and attention to detail and the patient must be kept under close observation. The adduction power must be built to a point where the patient can comfortably overcome his exophoria with sufficient reserve left over. It is also noteworthy that with the correction of horizontal deviations, the hyperphoria will often disappear without particular treatment. It is true that many phorias do not disappear completely under orthoptic treatment when measured by the Maddox rod, but by its use the patient is made comfortable and is able to cope with the imbalance.

CASE REPORTS

Case 1. K. R. white male, age 25, received a depressed frontal fracture in an oil field accident. He was not rendered unconscious, and was hospitalized for twenty-two days. When first examined by me three months after injury, his chief complaints relative to the eyes were: Inability to read because of blurring of vision after a few minutes; dizziness and occipital headache. He had not been aware of diplopia. Vision was found to be 20/15 in both eyes, no diplopia. Muscle balance

showed 1 prism diopter of right hyperphoria at distance and near and there was no lateral muscle imbalance. Retinoscopy showed: right eye: plus 0:50 sphere; left eye: plus 0.25 cylinder axis 90. The fundi were normal. Glasses were not prescribed. He was seen again four months later because of persistence of his past complaints and at that time vision remained 20/15, 1 prism diopter of right hyperphoria at distance, no esophoria or exophoria, but 2 prism diopters of right hyperphoria and 14 prism diopters of exophoria at near. Ductions showed adduction 12, abduction 7. Orthoptic training was begun for base out exercise. He received treatment for three months with complete relief and the final examination revealed 0.75 prism diopter of right hyperphoria, no exophoria or esophoria at distance; 1 prism diopter of right hyperphoria and 2 to 3 exophoria at near. Ductions showed adduction 32, abduction 6.

Case 2. F. D. white male, age 37, was injured in an automobile accident. He was unconscious for 20 days and spent nine weeks in a hospital. Following his recovery and return to an entirely new type of work, he found that after reading for fifteen or twenty minutes the print blurred and a severe headache developed. A change of glasses had not helped. The first examination was made seven months after the accident and two months after onset of symptoms. Retinoscopy and post-cyclic refraction revealed a small change in the cylindrical correction he was wearing. Muscle balance showed orthophoria at distance, but at near 12 prism diopters of exophoria was present. Adduction was 11, abduction 5. Base out exercises have been started and will be continued for at least three months. Subjective symptoms have improved and at the last examination, he showed orthophoria at distance, 10 exophoria at near, with adduction 20, abduction 6. This case is an example of one in which base-in prisms in either slipover frame or incorporated in new lenses can be used to advantage; by their use, the patient can be made comfortable early in the period of treatment, and aided in readjusting himself to a new type of work, necessitated by the accident.

In attempting to discuss the underlying

cause of this type of ocular disturbance we are forced to speculate, since actual pathological examination is impossible. Microscopic hemorrhages in nuclear areas would lead to paralysis which no doubt accounts for many of the ocular paralysis seen after head injuries. It would, perhaps, be possible for such minute hemorrhages to be present in the convergence center, but such a selective lesion is highly improbable and we are not dealing with an actual convergence paralysis. Rather we are dealing with a convergence insufficiency, seen in many cases of non-traumatic origin. Indeed, we, perhaps, should consider the condition a result of convergence insufficiency alone, rather than a true exophoria, for in the strict sense of the word exophoria is an anomaly of the anatomic position of rest and must not be confounded with anomalies of nervous origin, as pointed out by Bielschowsky. On this hypothesis, we may reason that convergence, being a highly developed nervous mechanism, may be easily disturbed by the trauma of head injury and so class it with the frequently encountered mental and psychological changes seen following these injuries. Researches on co-ordinated movements of the eyes and the function of fusion are recorded in numerous articles found in monographs and textbooks. Most of the investigators limit themselves to the discussion of the role of fusion in concomitant strabismus. The scarcity of reports on disturbances of fusion is all the more striking by contrast. Perfectly co-ordinated conjugate movements of the eyes depends not only on intact conjugate centers but also upon uninterrupted inter-communicating fibers and unobstructed pathways from these centers to the nuclei of the oculo-motor nerves in the floor of the fourth ventricle. Peter reports that "paralysis of divergence, convergence and up and down movements are often found in disease along the Aqueduct of Sylvius and in the region of the anterior corpora quadrigemina. In these areas the transmitting fibers are easily caught in the posterior longitudinal bundles." Sedan in France reported the case of a professional boxer who suffered persistent exophoria following cerebral concussion sustained in the ring; he felt it

was due to convergence insufficiency but gave no explanation as to its pathology.

Prof. Jaensch of Germany reviews several of his personal cases with fusion disturbance following concussion of the brain and stresses the finding of a marked decrease in breadth of fusion; in some instances absolutely no breadth of fusion, in others as low as 5 prism degrees, 2 abduction and 3 adduction. In such cases any heterophoria present before the accident, but latent, would become manifest by the marked reduction in breadth of fusion. Again no pathological data are given, but mention is made of the possibility of small hemorrhages, edema or other injuries to the fusion center and tracts at the time of the injury.

It is difficult to explain why it occurs, but in summarizing attention is called to the occurrence of this ocular muscle imbalance of convergence insufficiency following head injury; to its delayed appearance, several months following the injury; and to the fact that orthoptic training to strengthen adduction power has yielded good results in six cases under my observation.

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CROSS-CYLINDER TESTS*

Their Use at the Trial Case

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Before reading a paper on cross-cylinder tests, I thought it might be well to ascertain the status of the cross-cylinder in Oklahoma. To that end, I sent a card containing three questions to one hundred oculists in the State. Of the sixty-nine who answered, twenty-one per cent stated that they used the cross-cylinder in practically one hundred per cent of adults, thirty-five per cent used it fairly frequently but not in a high percentage of cases, and forty-four per cent practically never used the cross-cylinder. Dr. Crisp of Denver in 1932 stated that he believed only about five per cent of ophthalmologists in this country were thoroughly acquainted with the cross-cylinder tests, so apparently the cross-cylinder is better known in Oklahoma than the country at large.

Dr. Edward Jackson has stated that the cross-cylinder is the most important single

means that we have for measuring the refraction of the eyes.

There are many excellent oculists though, who place the value of retinoscopy above every other test in refraction, but I believe that in adults of average intelligence the court of last appeal is examination at the trial case and not retinoscopy.

The cross-cylinder is used to test for astigmatism. And certainly precision in determining the axis and amount of the astigmatism is the most important consideration in refraction. In my own practice, about ninety-five per cent of all prescriptions contain a cylindrical correction. And it seems to me that even the small astigmatic errors not infrequently may give rise to the symptoms of eyestrain.

There are several reasons why the cross-cylinder tests are not well known. One reason is that text-books contain little information on the subject, and at least some

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of the information found in them is not accurate.

Another reason for unfamiliarity with the cross-cylinder tests is that the technique seems difficult, although actually it is rather simple.

It should be stressed that knowledge of the ophthalmic optics involved is not at all necessary in applying the tests. It is no more necessary to understand the theories of the cross-cylinder tests to use them accurately than it is to be a master mechanic in order to drive an automobile. And, therefore, this paper will concern itself more with the practical than the theoretical side of the cross-cylinder.

The cross-cylinder is a compound lens, so constructed that the minus strength of one meridian is equal to the plus strength of the meridian at right angles to it. The cross-cylinders in common use are the minus 0.12 cylinder crossed at right angles with a plus 0.12 cylinder, the 0.25 diopter cross-cylinder, the 0.37, 0.50 and 1.00. These are made by combining a minus sphere with a plus cylinder twice as strong as the sphere.

The cross-cylinder is mounted in a ring one and one-half inches in diameter with the plus and minus axes at forty-five degrees from the round handle. The instrument is held about an inch in front of the trial frame so that by rolling the handle between the thumb and forefinger, the axes of the cross-cylinder may be rapidly interchanged, thus giving the patient two views in rapid succession for comparison.

There are two cross-cylinder tests, one for the strength of the astigmatism and one for the axis.

In the test for strength, one axis of the cross-cylinder is held parallel with the axis of the test cylinder in the trial frame and then quickly rotated so that the opposite axis of the cross-cylinder is parallel with the test cylinder. The patient looks at the lowest line on which he can read any letters and states which position looks better to him without actually reading the letters except in the final tests.

The position that is preferred by the patient indicates the character but not the amount of the change in the strength of

the cylinder. If the cylinder in the trial frame is plus and the preferred position is with the plus axis of the cross-cylinder parallel to the trial cylinder axis, then the strength of the trial cylinder should be increased. If the preferred position is with the minus axis parallel to the trial cylinder axis, then the strength of the trial cylinder should be decreased. And vice versa, if the test cylinder is minus. After changing the strength of the cylinder by any arbitrary amount, the test is repeated to determine whether the change is correct or too great or too small. The proper correction is attained when the patient reads the same with each position. At this stage vision with each position of the cross-cylinder is worse than without the cross-cylinder in place. To save time, it is well to warn the patient in advance that both positions will be worse with the cross-cylinder in place and that you wish him to choose the better of the two or indicate that they are equally bad.

The test for axis is made with the axes of the cross-cylinder at forty-five degrees from the axis of the test cylinder. The cross-cylinder is "flipped" and the patient while looking at the lowest line on which he can make out any letters, indicates which is the better position. The axis of the test cylinder is then turned in the direction of the similar axis of the cross-cylinder, that is, plus toward plus if a plus test cylinder is used, and minus toward minus if the test cylinder is minus. The test merely indicates the direction but not the amount that the cylinder is to be moved. After moving the test cylinder an arbitrary number of degrees in the preferred direction, subsequent tests are made until the correct axis is found, whereupon there will be no preference and vision with each position will be the same. As with the test for strength, vision will be worse with the cross-cylinder in place than without it. Thus, the correct position is signaled by each position being equally bad.

Best results with the cross-cylinder tests are obtained with the accommodation at rest.

The 0.25 D. cross-cylinder is the most common one used, but in high corrections

or in patients with poor vision, a 0.50 D. or 1.00 D. may be used.

In using the cross-cylinder to check the retinoscopic findings, one has the exact or nearly exact correction to start with and can proceed as previously outlined.

In those cases where the type of error is unknown, the strongest plus or weakest minus sphere is found which barely gives the maximum vision at six meters. Then the cross-cylinder is tried in the 90°-180° axes, and if a preference is expressed, a cylinder is inserted as indicated and the axis and the strength of the cylinder worked out. It may be necessary from time to time to make minor changes in the strength of the sphere.

If the patient does not indicate a preference in the 90°-180° meridians, the 60°-150° and 120°-30° should be tried.

The principle of the axis test with the cross-cylinder is the same as that in Lindner's cylinder retinoscopy. That is, if two similar equal cylinders are crossed at an acute angle, the axis of the newly formed sphero-cylinder will lie midway between the axes of the primary cylinders. If the two similar cylinders are unequal, the axis of the new sphero-cylinder will be between the primary axes but nearer the axis of the stronger cylinder. If a plus and a minus cylinder are crossed at an acute angle, the plus axis of the new sphero-cylinder will lie outside the acute angle in the direction of the primary plus axis.

Sturm's conoid explains what takes place in the cross-cylinder tests and explains particularly well why the cross-cylinder test for strength is different from adding plus or minus cylinders separately to check the correction as many refractionists do. The cross-cylinder simultaneously shifts the position of both ends of Sturm's conoid without displacing the center, but single cylinder additions move one extremity only of the conoid and thereby displace the center which actually changes the sphere as well as the cylinder.

The cross-cylinder test for the axis of the correcting cylinder is more accurate and more valuable than the test for strength. In the test for strength, one must be very careful or errors may be introduced.

In a short article that appeared in the April 1937 issue of the American Journal of Ophthalmology, I offered a suggestion in the marking of the cross-cylinder and technique of its use. In making the cross-cylinder tests it is imperative that the cross-cylinder be placed accurately in front of the test cylinder, and I believe this suggested new marking and variation in technique will render the placing of the cross-cylinder in front of the test cylinder much easier and faster as well as more accurate.

Because of the accuracy and rapidity with which astigmatic errors may be determined using the cross-cylinder, it is believed by several prominent oculists that this simple device is one of the most important in ophthalmology.

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Treatment of Eclampsia: Chairman's Address

Since the appearance of Lazard's article on the use of magnesium sulfate in 1925, Pierce Rucker, Richmond, Ca. (*Journal A. M. A., Oct. 2, 1937*), has treated 129 consecutive cases of eclampsia with a maternal mortality of 4.65 per cent. He has not followed a routine but has been guided by certain principles: stopping the convulsions, good nursing care with emphasis on rest, promoting renal activity and digitalis. Magnesium sulfate intravenously has been remarkably efficient in stopping convulsions. His initial dose is 20 cc. of a 10 per cent solution. Frequently he has given a second dose of 15 cc. and occasionally a third dose of 15 cc. Under the head of good nursing care comes the avoidance of external stimuli. The patient should be kept on her side to lessen the chance of aspirating vomitus and other fluids in the mouth. The tongue should be protected during the clonic stage of a convulsion, and the nurse should be prepared to give artificial respiration if it should be necessary. Usually the author relies on water or cream of tartar lemonade to promote renal activity. The best way to give fluids to an eclamptic patient is by the stomach. When there is anuria or marked oliguria dextrose intravenously is resorted to, the strength being varied according to whether there is much or little edema present. Digitalis has a definite place in the treatment of eclampsia. Half a cat unit is given as soon as possible after the magnesium sulfate or sodium amylal. The author has never seen edema of the lungs when digitalis has been given.

Procidentia Uteri With Cystocele and Rectocele*

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To understand correctly the principles of the surgical treatment of procidentia uteri, one must understand first of all that a prolapse is a hernia and that hernia, in whatever part of the body it occurs, depends on two essential factors—defect of fascia and internal pressure. It is the defect of fascia which must chiefly concern the surgeon, but the rationale of the operation must also take account of the pressure factor.

There are two features of a prolapse, particularly of a complete prolapse, that are likely to be over-emphasized in the mind of the physician—first, the uterus itself; second, the suspensory apparatus of the uterus.

In thinking in terms of the organ affected, we would do well to think primarily of the vagina rather than of the uterus. In thinking in terms of the part at fault, we would do well to think of the supportive apparatus of the cervix and vagina rather than of the suspensory apparatus of the uterus.

From the point of view of prolapse, the cervix should be regarded as the center of the vaginal vault. The cervix prolapses because the vault prolapses, and carries the cervix along with it. The uterus itself may for a time resist descent and thus serve to delay the fall of the vault. In other words, it is primarily a prolapse of the vagina and not the uterus.

A prolapse of the vagina may start in the vault, or in the anterior or the posterior wall. The lateral walls are so well guarded and supported that the initial bulging never takes place there. Prolapse of the vault may include the entire vault, or be limited to its anterior portion, above the bladder, or to its posterior portion. In the last named situation we get a true hernia

of Douglas' pouch, containing a sac of peritoneum; this is not, properly speaking a rectocele, but it may be mistaken for one. Prolapse of the anterior wall of the vagina may start in the portion corresponding to the base of the bladder, in which case we have cystocele, or it may start in the extreme lower end of the wall. Prolapse of the posterior wall of the vagina takes place at one site only, a site corresponding to the rectovaginal septum, and rectocele is the result. The final phase of vaginal prolapse is extroversion of the vagina as a whole, with procidentia of the entire uterus, bladder, urethra and rectum.



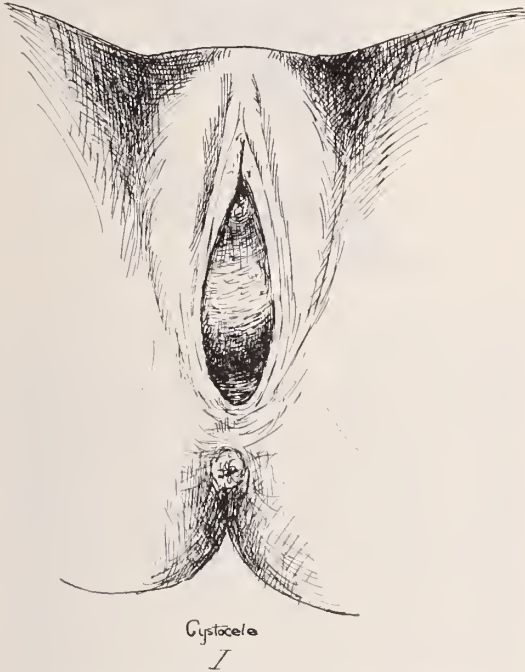
Cases as we see them in the final stages.

The cervix and lower third of the body of the uterus are embedded in a musculo-fascial framework known as the pelvic diaphragm, into which enter the upper group of the muscles of the pelvic floor, more particularly divisions of the levator ani. The lower group of the muscles of the pelvic floor have sphincter rather than supportive function. It is to the fasciae, therefore, rather than to the muscles, that we look for support, and the fasciae of the pelvic diaphragm are, in fact, of the utmost importance in holding the uterus in place. While these fasciae remain intact,

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prolapse of the uterus cannot take place. Should they become stretched or torn, prolapse, sooner or later, is inevitable.

Most gynecologists, while accepting constitutional factors in explanation of the cases of prolapse occurring in young girls and women who have never borne children, accord a greater primary significance to injuries of the birth canal in childbirth



Early case, usually accompanied with mild retroversion and decenus. Easily overlooked at examination.

as the etiology of prolapse in parous women. They insist, however, that it is not the number of children borne that is of itself important, but the injuries received and the subsequent neglect of these injuries.

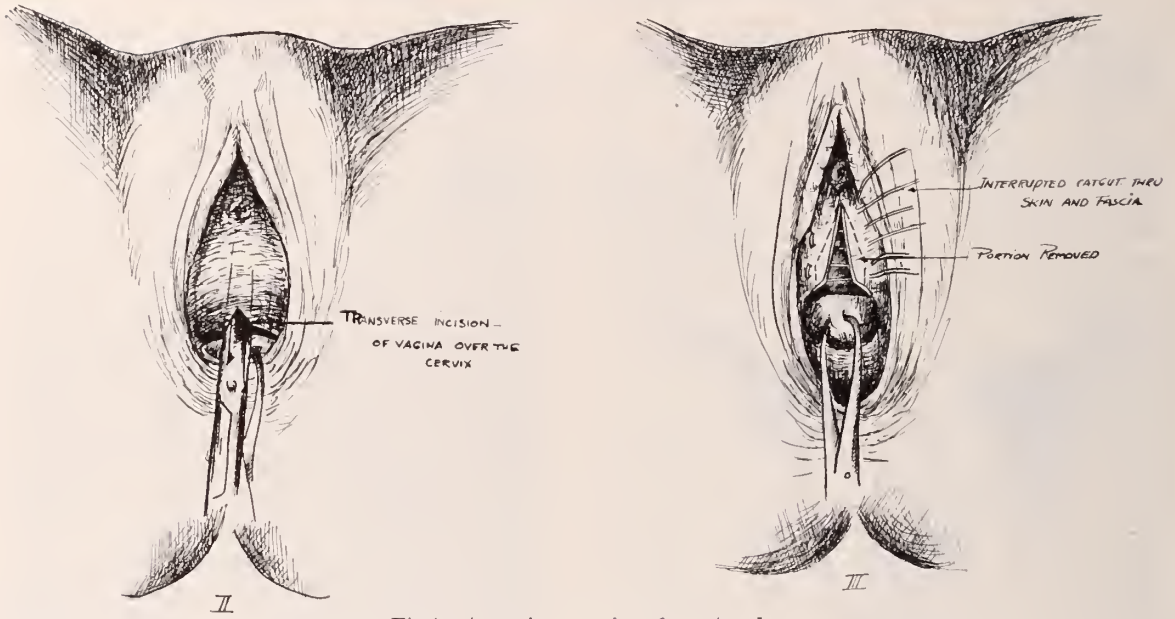
Instrumentation is a danger, but not the sole danger. Equally perilous is the birth carried through spontaneously but with unduly protracted second stage, especially if the baby is large. Salmond and Dearnley¹ in a comment on an English series of cases of prolapse subjected to analysis, deplore the evident lack of ability in some attendants at deliveries to distinguish accurately between the first and second stages of labor, with the result that the parturient is encouraged to bear down or forceps are used before the physiologic dilatation of the os has taken place. These authors urge, further, that it is better to

permit perineal laceration rather than overstretching of the vulvar outlet, for it is the large cervical tears, the stripping of the cervix from its fascial attachments, damage to the vagina, including overstretching with consequent permanent relaxation, rather than lacerations of the perineum, which give rise to prolapse. A perineal laceration may, however, facilitate descent of the uterus through destroying the normal sphincter action of the vagina, and such a laceration may, through the effects of the inflammatory reaction, resulting in adhesion between the rectal and vaginal wall, be the effective cause of a rectocele in the presence of prolapse of the vagina.

Neglect in the later puerperium, especially among the poorer classes, is a potent cause of prolapse, as may be seen in the greater number of cases in women of the hard-working classes. The supports of the uterus and vagina do not need to be torn to produce prolapse. Overstretching, with loss of elasticity, and failure to regain elasticity in the normal way after childbirth, through too early return to domestic routine or outside occupation entailing heavy physical exertion, is sufficient to work the evil. As a rule, however, prolapse is of slow development and there is time to prevent serious consequences of the sort from childbirth injuries provided only that these injuries are recognized and the corrective measures taken in time.

Subjective symptoms may be absent, or, at any rate, tolerable to the patient, even in an advanced stage of prolapse, and even with the uterus outside the introitus. Symptoms most often complained of are low backache, a dragging, bearing down sensation of weight in the pelvis, headache and pain in the back of the neck, nervousness and irritability, disturbed menstruation, bladder disturbances and general fatigueability. The symptoms are usually exaggerated during the menstrual period and when the patient has to be long upon her feet, for instance, in ironing. Physical examination is negative in early cases. When the condition is further advanced, especially when it has reached the stage of procidentia, the diagnosis is self-evident.

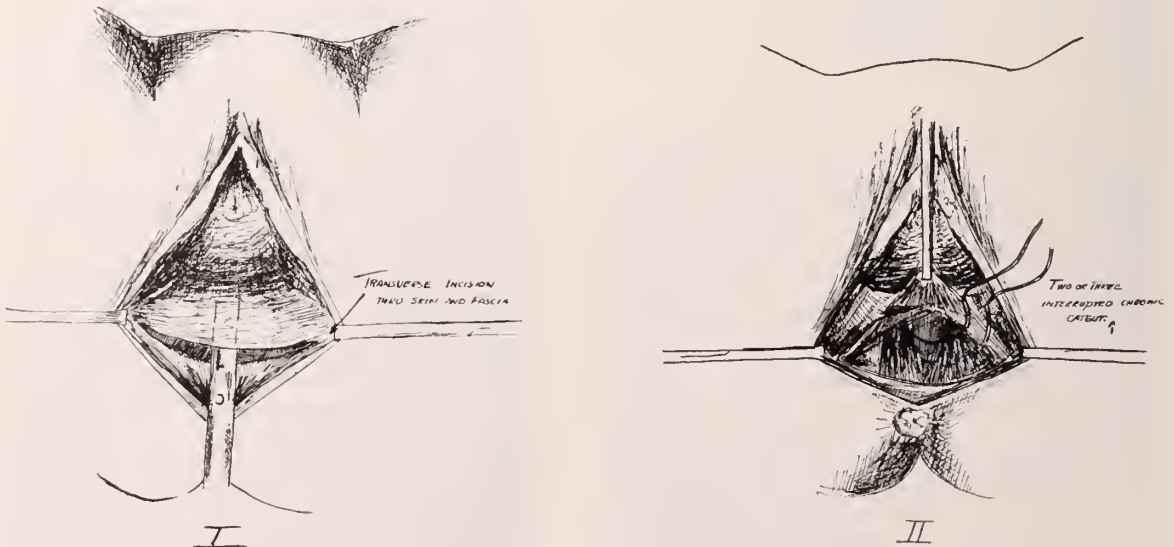
The first principle of surgical treatment



First steps in repair of cystocele.

for every type of hernia must be to repair the hernial opening, and where this cannot be done satisfactorily because of deterioration of the tissues, to nullify its effect by substitute measures. There is also, in every case, the care of the sac. All this is as true in the case of a prolapse of the vaginal canal as in that of a hernia of the inguinal canal. In the case of the vaginal canal there is the consideration that we have, as result of the procidentia, and perhaps also as its contributing cause, a tube with greatly widened caliber and much thinned walls. Such a tube is far more

liable to eversion than a narrow tube with thick walls. Normally, the vaginal walls are so thick in relation to the caliber of the tube that turning inside out is impossible except under exceptional conditions. To compensate for the thinning and tissue deterioration of the walls, the surgeon must more or less overcorrect the enlarged caliber of the tube. This is effected by cutting away more or less of the vaginal wall. However, no discussion of this subject would be complete without mentioning the interposition operations of the late Tommy Watkins, though I do not endorse



Steps in repair of rectocele.



*Fixation of Body of Uterus
to Rectus Muscles*

The final step in complete repair.

it. In his operation the problem is attacked from the other direction, that of the thinness of the walls, the body of the interposed uterus serving to thicken the anterior vaginal wall. In this operation the uterus is used primarily as a plug to close the hernial opening and to provide a shelf to support the prolapsed bladder. This operation is suitable only in very select cases of moderate-sized prolapse, with normal-sized uterus, and it must not be used in women in the reproductive age unless sterilization is performed.

At the Mayo Clinic, vaginal hysterectomy is in favor in the treatment of prolapse in older women, with union of the broad ligaments in midline, to provide a shelf for the bladder. However, I think the Manchester operation carries a lighter risk than the Mayo hysterectomy and that the end results are just as desirable.

There can be no one ideal operation for prolapsed uterus; age and condition of patient, stage of the process and state of the tissues are all factors whose proper consideration must lead to the individualization of the case at hand. For the typical uncomplicated case, in a woman in good surgical condition and past the menopause, with a definite procidentia, cystocele and rectocele, I like to do an anterior and posterior colporrhaphy, then open the abdomen through a midline incision and anchor the uterus to the muscle of the abdominal

wall. If the woman has not reached the menopause, she should, of course, be sterilized by sectioning or removing the tubes before the uterus is anchored, and if there is coexisting disease of the uterus, hysterectomy should be performed and the stump of the uterus anchored. In a woman who has not reached the menopause but is having much menstrual disturbance, such as dysmenorrhea, menorrhagia or metrorrhagia, I think it is much better to remove the uterus at the time of the repair of the prolapse, always conserving the ovaries. Many advanced cases of prolapse are sent to me for vaginal hysterectomy, and occasionally, in well selected cases, especially in the obese, it is the method of choice when it is combined with anterior and posterior colporrhaphy. But as a rule I think it better not to remove the normal uterus but to anchor it up for the additional support, and when it is removed, I think it is better to do this through the abdomen in order that the stump may be anchored up. However, if the patient is old and her general condition is too frail to submit to major surgery, the Manchester operation is to my mind the simplest and the most satisfactory compromise. Cystocele and rectocele occasionally occur without prolapse of the uterus; in other cases, though prolapse of the uterus is present, the cystocele or rectocele may be the further advanced. Sometimes, in such cases, the cystocele or rectocele may be cured by repair work alone, but when the uterus is at all too low, the condition is much less likely to recur with the uterus anchored.

SUMMARY

Prolapse of the uterus, cystocele and rectocele occur only with insufficiency of the connective tissue supports (cardinal ligaments) of the vagina. They are essentially hernias. The greater number of cases occur in women who have given birth to children, and are directly dependent on injuries to the birth canal and too-poor after care, or to failure to regain normal tissue elasticity because of too-early return to strenuous work. Operative treatment must conform to the circumstances of the individual case, taking into Anterior and posterior colporrhaphy should

account the age of the patient. In suitable cases, the author prefers anchoring the uterus to its removal. If removal is indicated, he prefers the abdominal route so that the uterine stump may be anchored.

form a part of every operation for prolapse.

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The Recognition and Management of the More Common Cardiac Conditions*

W. L. SHIPPEY, M.D.
POTEAU

The increasing incidence of heart disease and its subsequent mortality increases our professional obligation. It is our duty to be on the lookout for the earliest disturbances of function so that we may advise such a readjustment of habits and activities as may be necessary to avoid or delay more serious impairment. The symptoms in these cases are often of long duration but they are usually disregarded by the man whose health and vitality have been his boast and who is unwilling to admit to himself that he is not as fit as he once was. In a man of lesser sensitiveness or intelligence the symptoms may not be even noticed until collapse supervenes. Again the phenomena may be ascribed to some more apparent cause, too often by the doctor who makes his diagnosis from the patient's story and without adequate examination lulls his apprehension with a joke and a bottle of medicine.

It might be profitable to review the symptoms usually regarded as cardiac symptoms and ascertain the value of each as indicating heart disease. The most important symptoms usually designated as being cardiac in origin are dyspnea, edema, cyanosis, palpitation, pain, weakness and disturbance in cardiac rhythm.

Dyspnea as it occurs in heart disease indicates the inability of the blood to take up the proper amount of oxygen from the lungs. In pulmonary disease it may rep-

resent a similar imperfection. A patient with a paroxysmal type of dyspnea is too often superficially examined and regarded as having bronchial asthma or asthmatic bronchitis, the underlying disturbance being overlooked as in chronic nonvalvular heart disease.

A second myocardial group misdiagnosed frequently is the markedly edematous patient with a regular, not very rapid pulse, the urine containing albumin and casts being considered as a case of nephritis. With edema, however, the urine picture being due to passive congestion of the kidney as shown by the speedy disappearance of albumin and casts as a sequence to adequate cardiac therapy. Edema is one finding which, if independent in type almost invariably indicates organic heart disease.

Since cyanosis depends not only on proper oxygenation of the blood but also on certain vasomotor factors and certain drugs, it can be appreciated that cyanosis in itself does not indicate heart disease.

Palpitation is seldom an indication of organic heart disease as it occurs far more frequently in the thyrotoxicosis, effort syndrom, or it may mean simply the distension of the stomach or colon with gas.

Pain, if occurring in a younger individual almost never indicates organic heart disease. On the other hand, in an elderly individual pain may be the early and predominate symptoms of actual heart

*Read before the Southeastern Oklahoma Medical Society, McAlester, Oklahoma.

disease. Thus the symptom pain must be evaluated with discretion.

Weakness occurs so frequently in a vast number of medical conditions, that it can never be taken to mean heart disease unless accompanied by more significant findings.

The arrhythmia may be cardiac or extra cardiac in origin, but the presence of an arrhythmia presupposes a searching examination of the patient, often electrocardiographic studies are required to determine the underlying pathology. These irregularities of the heart although but symptoms, have come to be considered as much in detail as clinical entities. That they are but symptoms must not be lost sight of. Frequently the removal of the underlying etiology is sufficient, however, it is often necessary to direct our treatment toward the relief of the arrhythmia.

Sinus arrhythmia, most common in occurrence is usually extra cardiac, but the pathology may be in the heart as in coronary thrombosis. It occurs more frequently in childhood. Speeding up the heart with exercise often causes this arrhythmia to disappear. It is usually functional unless the history indicates previous disease capable of permanently affecting the heart or because of improper use of digitalis. The point to remember is that no restriction of treatment should be instituted because of this irregularity alone.

The frequency that extra systole is found in routine examination of patients causes this symptom to be passed over lightly without its just consideration and while it is true that the very specialized tissues of the heart under certain circumstances probably are able to initiate spontaneous contraction it appears that under the usual normal conditions this function fails to be exercised. In the strictest sense we might consider all extra systoles pathologic. It is impossible to separate the nervous from the muscular influence that go into formation of these spontaneous beats. A point well to remember is that premature beats originating in the auricle are more likely to be from nervous influence. Those originating in the ventricle are more frequently muscular in origin.

These premature beats are often present in hypertensive heart disease and often precede the onset of auricular fibrillation. They are more frequently due to toxicity from tea, coffee, alcohol, tobacco, over eating or improper food. Fatigue, loss of sleep, or any situation which lowers the general level of bodily well being may cause them.

Auricular fibrillation and flutter for all practical purposes may be considered together. When the potency of the etiological factor is not so great they may occur in paroxysms. This is a valuable sign in early diagnosis. These irregularities are by far the most common occurring among the sick. However, they may occur as paroxysm in healthy hearts from exertion, indiscretion in eating or drinking, or in methods of living. Rest, restriction of diet and treatment of intestinal disturbances may cause them to suddenly disappear. Quinidine, is a drug of choice in this situation. We find these arrhythmias associated with rheumatic fever manifestations, hypertension, coronary artery disease and hyperthyroidism. The purpose sought in their treatment is to reduce the ventricular rate as counted by the stethoscope to a rate ranging from seventy to eighty per minute. In ordinary cases diagnosed early this can be accomplished by using twenty m. tincture digitalis, or two grains of the leaves, t.i.d. Ordinarily in one week with bed rest this result is accomplished, then the dosage is reduced to maintenance to keep the rate within normal range. Sometimes we see these cases with urgent symptoms of failing heart or in extremis. They require rapid digitalization and there are several intravenous digitalis preparations on the market that are adequate to take care of this situation. Strophanthin in my opinion has no advantage here; however, it may be given 1/120 gr. repeated in two hours and again in four hours. Its action is slightly quicker than digitalis. Two conditions occur particularly in older persons in which digitalis and like drugs are contraindicated; first, auricular fibrillation of normal rate and without symptoms; second, an elderly person with marked congestive heart failure rates seventy to eighty with or without digitalis. To further reduce this rate is exceedingly

dangerous, absolute bed rest and opium is indicated. In marked congestive heart failure with venous distension and cyanosis blood letting may be a life saving measure.

In the paroxysmal tachycardia we must differentiate those of supraventricular origin and those of ventricular origin. The former commonly occur in cases of patients without important heart disease due chiefly to toxic or nervous influences, yielding to mild sedation and reassurance. Such a simple procedure as ocular pressure over the carotid sinus may suffice to end the paroxysm. Ventricular tachycardia, on the other hand, generally occurs only in the presence of serious myocardial insult. It is not uncommon for independent ventricular contraction to result from digitalis intoxication or from myocardial infarct. Serious impairment of the circulation may result and render it advisable to employ measures designed primarily to abolish the abnormal rhythm. In most instances the attacks subside spontaneously before this occasion arises.

Alteration of ventricular contraction occurs only in the presence of grave myocardial embarrassment. Continued alteration is of serious import. It is not a disease entity but evidence of serious impairment of myocardial function. Its correction rests only upon measures that restore the myocardium to a more normal status.

It will be observed that alterations perhaps the gravest of continued arrhythmia in common with sinus arrhythmia, the simplest, illustrates the principle generally applicable to all. It is a sign, not a disease. Consideration must be given to the cause, and treatment must be directed at the heart.

There are a number of diseases frequently misdiagnosed as heart disease. Chief among these being gastrointestinal disorders, incipient T. B., and emphysema. Effort syndrome or so called "soldiers heart" is probably mistaken for organic heart disease more than any other condition. Any normal individual upon severe exercise will exhibit the symptoms of dyspnea, cyanosis, palpitation, precordial pain, weakness and even nausea and vom-

iting. In short, these are the normal symptoms of "exertion" or "effort." The victims of this condition present the same symptoms in severe form, oftentimes on slight exertion, more often on mere emotional exertion. The differential diagnosis is sometimes difficult but here the heart is of normal size and these individuals never have edema. The physician who recognizes this condition and successfully assures his patient that he does not have an organic heart disease is doing a real service and alleviates a mental hazard that would otherwise prove disastrous. Bromides are often the complete menu in these cases.

The condition of thyrotoxicosis may simulate heart disease in that the symptoms of palpitation, pain, and weakness are sometimes quite marked. Truly enough such a condition will eventually result in cardiac damage, because of the rapid rate and possibly because of the specific toxic effect on the heart muscle. However, if the thyrotoxicosis is removed early there is no apparent damage and several months following operation the heart will be perfectly normal. At this point I might profitably add that we should be wary of diagnosing a systolic murmur heard at the apex and not transmissible as being organic in character. This is often confused with mitral stenosis, but the latter is slightly presystolic, in time most generally accompanied by a thrill on palpitation; pulsation is usually prominent over the region of the apex beat, and the pulmonic artery.

I have perhaps over emphasized the clinical diseases which present so called cardiac symptoms but are not due to organic heart disease, therefore, the question may well arise as to the criterion on which to make our differential diagnosis. If the heart is enlarged there is invariably an organic cardiac lesion; on the other hand, if the heart is not enlarged, organic heart disease is practically ruled out. The one exception being possibly that of general arteriosclerosis where angina pectoris is the presenting symptom complex.

The history of an etiological factor is helpful in determining the presence of organic heart disease such as rheumatic fever, chorea, repeated attacks of sore throat,

diphtheria, and in elderly people arteriosclerosis. A diastolic murmur always indicates organic lesion of the heart as it can only mean a valvular lesion. The presence of dependent edema, providing other causes of edema can be ruled out, is a definite indication.

We classify cardiac disease in three groups: rheumatic heart disease, luetic heart disease, and arterio sclerotic heart disease. Of course, there are a number of other cardiac conditions such as congenital heart and various types of endocarditis and pericarditis, but for the most part our cases in this section can be placed in one of the above groups. These groups may be also separated somewhat as to their ages. Rheumatic heart disease makes up the majority up to twenty-five or thirty years. Luetic heart disease occurs chiefly from thirty-five to fifty years, while arteriosclerotic heart disease is usually found in persons past fifty.

The story of rheumatic heart disease is a familiar one, a child of one to ten years of age develops rheumatic fever or chorea, they usually recover and frequently no cardiac involvement is noted. They then go for a period of months or years and develop a similar attack. Usually during this second attack evidence of cardiac involvement is manifested. This may be a mere systolic murmur at the apex or a severe pericarditis with effusion. They again usually get better but from then on cardiac symptoms are usually present in the form of myocarditis, adhesive pericarditis, etc. They have subsequent attacks of rheumatic fever but with each succeeding attack the joint symptoms are less marked and the cardiac symptoms are more in evidence. Tonsillar infection usually precedes or accompanies these attacks. The course of the disease is not always so text book, however. In fact, a large number of these rheumatic heart cases have the first knowledge of their handicap on the application for life insurance or working papers. There is no hint in their history of previous rheumatic infection. This lends emphasis to the belief that a large number of these cases are subclinical; in other words, before the inflammatory process in the heart has gone far enough to produce physical signs or

definite symptoms, fairly extensive involvement may have already occurred. Then I think it would be wise to assume in spite of the absence of proof, that the heart is always involved, even when the manifestation is only chorea. The entire heart is invariably involved; the pericardium, myocardium and endocardium being damaged although one part usually predominates.

Then if we intelligently manage rheumatic cardiacs we must realize that the condition of the heart is but part of the picture of an infectious process. If the patient is ambulatory two questions must always be uppermost in our minds; first, and most important, is the infection active? second, is there evidence of decompensation?

Since the disease is an infection the exact etiology of which is still unknown the best we can do is to try to help each individual keep as close as possible to his optimum state of health and to increase his resistance to infection. This means attention to his diet, the amount of rest and recreation he gets. If he already has evidence of cardiac involvement, his activities should be regulated so that it approximates his full capacity, but never to quite reach or go beyond it. Infected tonsils or other abnormal conditions should be removed; we must be alert for evidence of the return of active infection. Digitalis is a valuable adjunct in treating these patients, even in the absence of auricular fibrillation. Often they are able to lead a fairly active existence on digitalis, whereas without it, they become cardiac invalids. When decompensation occurs these cases of course, acquire absolute bed rest. Sedatives and narcotics should be given to insure their rest, if after a few days the signs of failure have not diminished, the process of digitalization should be completed. If this does not suffice theosine and diuretics of this group may be of value. If the edema still exists mercurial diuretics salyrgan, or mercupeine are in order. The latter may be used in the form of rectal suppositories. Salyrgan is best given intravenously. The value of either is accentuated by the administration of ammonium chloride in full doses

twenty-four to forty-eight hours before the administration of the mercurial diuretic.

Luetic Heart Disease: The pathology underlying luetic heart disease, is also very characteristic and should be constantly kept in mind. It must be remembered that the onset of heart trouble from this cause occurs usually after a latent period, averaging sixteen years, at a time when no clinical sign of luetic infection is present. The pathology invariably begins in the aorta just above the aortic ring, thus we have aortitis. From this point the process extends over the arch of the aorta in which case we may look for the clinical picture of aortic aneurysm. It may progress toward the valve and involve the coronary vessels. In this case the clinical picture will be that of angina pectoris, coronary thrombosis, etc. Lastly it may progress downward to involve the aortic valve, either apparently skipping the coronaries or involving them as well. This type of pathology will produce the clinical picture of aortic insufficiency. The treatment of luetic heart disease is very unsatisfactory. These patients usually die within two years of the onset of cardiac symptoms although the exceptional case of aneurysm lives much longer. Active antiluetic treatment is definitely contraindicated and unquestionably shortens the life of the patient. Potassium iodide in large doses gives the most relief, particularly if pain is a factor. In the presence of decompensation digitalis, of course, indicated, but frequently does little if any good.

Arterio Sclerotic Heart Disease: Today one-fourth of all the deaths above the age of fifty is due to hypertensive heart disease. The cardiac disturbances as a result of this condition, have as their pathological background sclerotic lesions in the coronary vessels which impair the nutrition of the heart muscle and frequently interfere with the normal condition of the cardiac impulse. Also there is a change in the heart itself because of a sequence of changes due directly or indirectly to the increased systolic and diastolic pressures. As long as the hypertrophied heart can maintain a pulse pressure one half as

great as the elevated diastolic pressure a fairly adequate circulation is maintained. For this reason a large number of these cases are not seen until irreparable damage has been done. This condition is one of the more frequent causes of chronic heart failure or failure that is slow in its progression. Acute heart failure cases admit but of relatively little opportunity for lack of recognition but these slow progressive failures tax our clinical ability, for it is here that definite symptoms appear indicating organic heart disease, but are frequently misinterpreted.

Often these patients are exhausted, without their usual strength. Sooner or later dyspnea appears, first on marked exertion, later on the slightest provocation, with this orthopnea. Cyanosis is often very slight. Edema in the dependent portions of the body begins to make its appearance; pulmonary edema may be present, and more frequently ascites. The blood pressure is reduced below its usual level, the pulse pressure becomes less and less. At about this stage irrespective of the pathology the arrhythmia appears. Gastro intestinal symptoms are complained of, nausea, flatulence, and distress after eating. These symptoms are due to enlargement of the liver, congestion of the intestinal mucosa and ascites. Jaundice frequently appears due to fibrosis of the liver interstitium as a result of chronic liver congestion. The amount of urine is decreased. The specific gravity is increased, cast and blood cells appear in the urine. Nitrogenous retention in the blood serum may be found. Cough appears and a rusty bloody serum is expectorated. Considerable areas of almost inflammatory character appear in the lungs. The result of congestion and edema of the lung tissue. Precordial distress may be marked or slight; there is peripheral venous and capillary congestion. Hemorrhoids may appear. Anemia develops, mentality is slowed, headache is bothersome. Menorrhagia during menstruation may occur. Eye sight and the special senses wane. There is no function or part of the body that does not suffer in these chronic cases of cardiac inadequacy.

If we recall the mechanism of the pro-

cess and take a careful history, and make a close inspection, put these together with our findings on auscultation and percussion there is small probability that we will be misled in our diagnosis.

In treating these cases it is often difficult to tell when active treatment becomes imperative. Cases with pathology in which chronic failure is likely to occur should have routine examinations. Very small doses of digitalis may keep these patients in good health and comfort for long periods. It must be individualized to the patient.

Rest is all important. This must not be overdone, but prescribed in individual doses. Also physiotherapy is important. Laxatives are frequently indicated. Salines are probably the most valuable because of their dehydrating effect. Calomel should be remembered, it often acts as diuretic as well as a cathartic.

Diuretics are of recognized value as theocine and caffeine. They also have a stimulant action on the heart. It must be remembered that they are also cerebral stimulants and may cause insomnia and irritability. Ammonium chloride in full doses is a valuable diuretic.

Sedatives are often indispensable and bromides or chloral hydrates are not to be displaced by any of the newer hypnotics. If these do not work we must resort to an opiate. Vaso dilators are indicated for symptomatic use rather than as a routine treatment for the reduction of hypertension. In hydremic cases fluids must be restricted. Salt foods curtailed. Sweating favored, mercurial diuretics may be required, and atropine is often of value. It may become necessary to resort to Southey's tubes to evacuate plural or peritoneal exudates.

This subject presents many points for discussion. It would be impossible to discuss all of them in the time allotted but I hope that by reviewing some of them I may be able to stimulate a discussion of a number of others and thereby completely review the subject to the advantage of all of us.

NEW HOSPITALS

The opening of the North Mississippi Community Hospital at Tupelo, Mississippi, on October 3rd, gives the northeastern part of this state a modern, fireproof, well-equipped 50-bed hospital held in trust for the public, open to all qualified physicians and designed to serve the sick without discrimination.

This is the eighth such hospital to be built with the aid of the Commonwealth Fund of New York, which is now undertaking to provide one new hospital each year for a predominantly rural community which will agree to meet its share of costs and to run the institution in accordance with generally accepted standards. The ninth in the group is now under construction at Ada, Oklahoma, and the tenth has been awarded to the community centering in Provo, Utah.

The Fund began this project in 1926 as an experiment in meeting the need of rural communities for better medical and other health services. It was known that adequate hospital facilities were lacking in many rural districts, that recent graduates from medical schools were not entering rural practice in proportion to local needs, and that in spite of substantial progress in some parts of the country, health services in rural areas were not so well developed as those usually found in cities. It was assumed that the presence of well planned and well conducted hospitals would to some degree correct this situation, and experience in half a dozen different states indicates that the hope was justified.

The present plan is to aid in establishing hospitals having a capacity of between 25 and 50 beds and easily accessible to a rural community having a population large enough to make good use of such accommodations and capable of meeting operating costs. The hospital may either be a totally new institution, or may replace existing facilities which are clearly inadequate. The fund furnishes plans, specifications, and architectural supervision for the construction, and not less than \$200,000 as a contribution toward capital costs. It advises in the organization of the hospital corporation and the medical staff, offers assistance in meeting the administrative problems of the early years and provides a number of fellowships for postgraduate study by members of the medical staff.

Communities needing a 50-bed hospital are required to raise from \$40,000 to \$60,000 for their share of the capital cost and must provide in addition a site (with service connections) and from \$10,000 to \$15,000 to meet the deficit of the first year's operation. Ownership and administrative responsibility are lodged in a local corporation, organized not for profit, which contracts with the Fund to operate the hospital in agreement with specified standards. These standards are such as to guarantee its integrity as a community institution and to justify its approval by the American College of Surgeons.

Hospitals founded under this program are now operating in Murfreesboro, Tennessee; Farmville, Virginia; Glasgow, Kentucky; Farmington, Maine; Wauseon, Ohio; Beloit, Kansas; and Kingsport, Tennessee.

200 MORE IN 1937

There are at least two hundred more men in the state eligible for membership in our Association. Let's make members of them during 1937.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council.

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

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McAlester, Oklahoma

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Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

OPPOSE INITIATIVE PETITION NO. 166

The meeting of the Council and House of Delegates held in Oklahoma City during the meeting of the Oklahoma City Clinical Society was of much interest to those present and it would appear that considerable good was accomplished.

The Council, at its meeting, gave careful consideration to the protest being prepared against Initiative Petition No. 166. This Petition, as you know from the letter which you received from the Chairman of the Legislative Committee, is a most vicious thing. It is not only unfair but unreasonable—however, it is so framed by these astute politicians that it will appeal to the ignorant and is consequently very dangerous. This Petition would create a

Board composed of the three schools of medicine, i. e., Eclectic, Homeopath, and Regular, and no school would have a majority of the Board. In other words it can be a three, six or nine man Board, but each of these schools would be equally represented. It must be evident to you that this is a most unfair procedure, as practically all of the applicants for licensure in this State are regular physicians. There has not been an Eclectic or Homeopath examined by our Board in the past fifteen years. At this time there is only one Homeopathic school in the United States, and that is the Hahnemann Medical College in Philadelphia, and they give a course which is complete in regular medicine. There is one Eclectic college in the United States located in Cincinnati, and their Board of Trustees passed a resolution that they would receive no more students. Consequently this school will be out of existence in the next three years.

In spite of these facts this vicious proposition would give all three schools equal representation. This is one of the propositions, the next being that "appeals from convictions before the State Board of Medical Examiners would be taken directly to the District Court," and this as you can see would practically nullify the action of the Board. The third and probably most vicious article of this proposed bill is to the effect "that 'capping' and 'steering,' soliciting of business, circulating of petitions, and other methods of procuring business would not be considered unethical."

This would, of course, demoralize the standards of the regular practitioners of medicine in this State, and there would be no possible way of maintaining the present ethical standard of the practice of medicine.

Whether or not this bill will be presented to the people depends upon our ability to fight this Petition on account of numerous irregularities relative to the signers. The Petition has been gone over by handwriting experts and the irregularities are numerous. No matter if it is decided by the Secretary of State that the Petition is sufficient or invalid, appeal will be made to the State Supreme Court and it will then be necessary to make a grass root in-

vestigation of each petition, comparing the names of the signers of the petition with the registration books in the respective voting precincts.

This will, as you can see, require an enormous amount of work. This Petition is opposed by the thinking people of this State and we can expect the support of all those who wish to see the standard of medicine maintained. However, it is a perilous situation and it behooves the doctors of the State of Oklahoma to give their complete support to the effort being made to nullify the Petition.

The Legislative Committee is putting in an enormous amount of work and time and any assistance that can be rendered them by the doctors should be given freely.

At the meeting of the House of Delegates, which followed the meeting of the Council, able speakers were presented and they cautioned the doctors of this State that they must become politically minded and be vitally interested in legislative matters as well as in the election of competent legislators.

We were fortunate in having with us Dr. J. H. J. Upham, President of the American Medical Association, who addressed the House of Delegates and brought to us a message that should stimulate us in our efforts to give to this State, legislative enactment that would protect the health of our people as well as maintain a high standard in the practice of medicine.

Editorial Notes—Personal and General

PERSONNEL OF THE STATE BOARD OF EXAMINERS IN THE BASIC SCIENCES

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DR. SHADE D. NEELY, Muskogee, has been appointed County Health Superintendent of Muskogee County, to succeed Dr. Chas. Ed. White, Muskogee.

DR. G. M. RUSHING, Durant, has been appointed County Health Superintendent of Bryan County, to succeed Dr. H. B. Fuston, Bokchito.

DR. AND MRS. A. S. RISSER, Blackwell, have returned from Pensacola, Fla., where Dr. Risser

attended the medical meeting of the Frisco Railroad, which was held in October.

DR. CHAS. K. MILLS, McAlester, has returned from Chicago, where he attended the meeting of the American College of Surgeons, and received his fellowship in the College.

DR. JAMES A. LAND of Hobart has been appointed Superintendent of Western Oklahoma Tuberculosis Sanatorium, Clinton, Oklahoma. Dr. Will C. Wait, the former Superintendent is taking Post Graduate work at Tulane before opening his office in McAlester early in the year.

DR. ALLEN R. RUSSELL attended the meeting of the Southwest Branch Society of the American Urological Association held in Tulsa, in October.

News of the County Medical Societies

OKMULGEE-OKFUSKEE County Medical Societies met at Henryetta on Monday evening, October 25th, at the Purity Cafe. Dinner was served.

The program was as follows:

Dr. Morris B. Lhevine, Tulsa, discussed: "Diagnosis and Treatment of Carcinoma of the Breast."

Dr. Andre B. Carney, Tulsa, read a paper on: "Surgical Procedures Following Irradiation in Carcinoma of the Breast."

Dr. Russell Pigford, Tulsa, spoke on: "Legislative Measures Affecting the Medical Profession in Oklahoma."

OBITUARIES

DOCTOR HUBERT W. CALLAHAN

Dr. Hubert W. Callahan, Tulsa, born May 27, 1887, at Garden City, Kansas, graduated from the University of Illinois College of Medicine, Chicago, in 1911, and served his internship at Columbus, Ohio. Died Monday, October 11, 1937.

DOCTOR JOHN W. WERNER

Dr. John W. Werner, formerly of Newkirk, died in a Chicago hospital October 12, 1937, following a short illness.

DEATH NOTICES

(Insufficient data for an obituary)

Dr. Frank Fannin, Muskogee, Okla., September 21, 1937.

Dr. John W. Werner, Newkirk, Okla., October 13, 1937.

Examinations, American Board of Obstetrics and Gynecology

The next examinations (written and review of case histories) for Group B candidates will be held in various cities of the United States and Canada FEBRUARY 5, 1938. Application for admission to these examinations must be filed on an official application form in the office of the Secretary at least sixty days prior to these dates.

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13, and 14, 1938, immediately prior to the meeting of the American Medical Association.

Application for admission to Group A examinations must be on file in the Secretary's Office before April 1, 1938.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, (6), Pa.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
717 North Robinson Street, Oklahoma City

A Reconstruction Operation for Old Ununited Fracture of the Femoral Neck. Paul C. Colonna, Jr. *Bone & Joint Surg.* Vol XIX, No. 4, Oct., 1937.

The author reports fifteen cases of old ununited fracture of the neck of the femur, operated by his previously described reconstruction operation for this injury. "Very briefly, the essential features of this reconstruction operation are: (1) The sectioning, close to their insertions, of all the muscles attached to the region of the greater trochanter, preserving a thin layer of fibromuscular tissue over the upper end of the bone; (2) the removal of the loose head; and (3) the placing of the upper extremity of the femur deeply and firmly within the acetabulum and transplanting of the gluteus medius and the gluteus minimus group of muscles downward on the shaft of the femur as far as they will reach, securely fastening them to the underlying bone."

The author considers three fundamental points in recommending treatment for this type of injury. The restoration of stability is important, to secure adequate weight bearing. This is maintained by inserting the trochanter into the acetabulum of the innominate bone. Stability is increased by the strong fascia of the thigh and upon the new insertion of the abductor muscle.

The maintenance of a satisfactory range of motion is important from the standpoint of walking, and also for relief of pain. It is imperative that no raw surfaces be permitted to oppose the cartilage of the acetabulum.

The third important point is the increase in length of an already shortened extremity. It was found by examining a number of adult femora that the greatest possible shortening by using the trochanter instead of the head of the femur was only three-fourths of an inch; the average being approximately one-half inch. This is due to the inclination of the neck of the femur. Pain has been found to be relieved by this operation but the cause of the pain is very difficult to determine. Whether this is due to lack of raw bony surfaces grating upon each other or to the increased motion and stability of the joint is not known, but the fact remains that the pain is partially relieved.

Following the operation the patient is placed in a spica cast with the limb abducted and in complete extension. After two weeks the posterior part of the cast is removed below the knee, allowing exercise of the knee and the foot while the patient is on his abdomen. After four weeks the patient is placed in a well fitting posterior plaster shell or in a felt sling and active and passive movements are begun at the hip. The patient is not permitted to bring the leg in adduction, however, at this time. After five or six weeks the patient is permitted to

get out of bed and is encouraged to walk. Physiotherapy is usually of value at this stage.

The complications of this series in which fifteen cases are described, the earliest of which was done in 1930, have been rather small. There was one death which was possibly a complication of the operation; this resulting nineteen days post-operative from a probable pulmonary embolism. There was one case with a soft tissue infection but no bony involvement and a good result was obtained. A third case has died from natural causes. In one case the stability of the hip was impaired, due to the fact that the patient fell and strongly adducted the leg and dislocated the upper end of the femur. She refused further treatment. However, she is up and about doing her housework. Thus, twelve of the fifteen cases are up and around with excellent range of motion; stable and relatively painless hips.

Low Back Pain and Sciatica: Its Etiology, Diagnosis and Treatment. A. Gurney Kimberley. *Surg. Gyn. & Obst.* Vol. 65, No. 2, Aug. 1937.

The anatomical variations and anomalies that exist at the junction of the lumbar spine with the sacrum are described in some detail. The weakness of a lumbo-sacral junction is pointed out, particularly the poor mechanical arrangement, the possible frequent separate neural arches, small intervertebral foramina between the fifth lumbar and the sacrum, are all discussed. Common anatomical peculiarities include variations in the articulations at the lumbo-sacral junction in which the normal sagittal articulation may vary from that of a typical sagittal to a coronal, or both may be present in the same person. Posterior displacement of the fifth lumbar vertebra occurs and is frequently associated with pain in this region. Transitional lumbo-sacral vertebra in which the fifth lumbar vertebra is apparently partially fused or appears to resemble at least the sacrum is described and its relation is pointed out to pain in this particular region. Exaggerated lumbo-sacral angle and spondylolisthesis are well known factors producing pain. Osteoarthritis, a condition not an anomaly but a degenerative change is also discussed as a possible cause. Narrowing of the intervertebral spaces from herniations or ruptures of the intervertebral disc have more recently been described as causes of lumbo-sacral pain and sciatica. Recently spinal punctures have been resorted to as a diagnostic aid in low back pain. High protein content is suggestive of cord tumor. Moderately increased protein content was found common in protrusions of the intervertebral discs in the lumbo-sacral area.

On the basis of the narrowed intervertebral foramina between the fifth lumbar vertebra and the sacrum, the author explains sciatic and low back pain as follows: "A simple adequate explanation for that major portion of sciatica and its accompanying phenomena not explainable on a referred basis is that irritation of the fifth lumbar nerve in its intervertebral foramen, or in the spinal

canal, causes a neuritis, lowers its threshold to stimuli, and sends protopathic sensations out along its motor branches. Sensory branches within the nerve which go to the lateral aspect of the leg are also stimulated, accounting for the more superficial nature of the pain and the occasional sensory changes in that area. If stimuli are strong enough they may spill over into the other branches of the sciatic nerve, resulting in such a phenomenon as pain in the lateral plantar aspect of the foot."

The diagnosis of low back trouble is rather difficult. It usually occurs between the years 20 and 50. Symptoms usually persist over several years and many doctors have the opportunity of treating these patients. Frequently a single traumatic accident initiates the symptoms, but more often there is an insidious onset with exacerbation following severe strain or trauma. Symptoms include muscle fatigue and ache in the low back area, which radiates out over the sacro-iliac joint and into the buttocks. There is stiffness of the back in the morning. Low back pain is experienced when quick movements are made, lifting, coughing and straining are painful. Foci of infection tend to increase the backache. Menstruation or chronic inflammatory conditions in the pelvic region increase the pain. A lateral lift to the trunk is frequently noted. There may or may not be a contracted tensor fascia lata. Poor posture is a common finding. Various tests can produce motion in the lumbosacral joint, and usually cause pain.

Differential diagnosis made of a primary myofascitis, spondylitis ankylopoietica (Marie-Strumpell type), osteo-arthritis, sacro-iliac strain, coccygodynia, fractures of the spine, cord tumors.

The treatment is divided into treatment for mild cases, which is non-operative consists of exercises to improve the body posture, heat and massage, elimination of bed sag by fracture board, and elimination of foci of infection. In cases of moderate severity it is advisable to apply a supporting belt, corset or brace. In severe cases, the non-operative treatment consists of a brace, bed rest, and sometimes adhesive traction to the legs with daily baking and massage. Epidural injections and forcible manipulations are discouraged. The operative treatment consists primarily of tensor fasciae latae fasciotomy and of a lumbo-sacral fusion. The fasciotomy is very valuable in some cases and is worth a trial in cases particularly which do not show severe anatomical anomaly. An ideal patient for this operation is one whose predominating symptom is sciatica and who has had the condition for less than a year and shows no X-ray evidence of a generalized spinal arthritis. Cases with too extensive a spondylitis to justify a spinal fusion may be relieved by this procedure. It keeps a patient in the hospital only a week; is very simple, and should be tried before trying the more severe spinal fusion. In very severe cases, which include those cases which have had every effort at non-operative treatment, spinal fusion of the lumbosacral joint has been found to be the best treatment. Approximately 70 per cent of these severe cases have been relieved by this type of operation. This is a very high percentage of relief considering the severity and the length of time the patient has had symptoms. An additional seven per cent had from 75 to 90 per cent relief.

The conclusions drawn are that low back pain and sciatica are commonly due to an unstable fifth lumbar vertebra which had placed upon supporting muscles, ligaments and joints, a load they are unable to carry. Most cases will get relief from non-operative measures. Tensor fasciae fasciotomy is a useful adjunct in the treatment of these cases. Lumbo-sacral spinal fusion is the most satisfac-

tory operative procedure and is indicated in about 10 per cent of the patients.

Eard D. McBride.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Late Results of Extraction of Cataract. Edward Jackson, M.D., Denver. Archives of Ophthalmology, September, 1937.

Again Jackson makes a valuable contribution to ophthalmological literature. He makes the point that the statistics of any large eye clinic such as in India, Vienna, London or America fail to correctly evaluate the end result of a cataract extraction. The reason is obvious. The patient goes to the clinic and is operated and fitted with the first glasses after the lens extraction and in the majority of cases fails to return to the one who did the operation. This is much different in private practice, where often the patient can be followed to the end of life.

An instance is cited of a diabetic patient who had one eye operated in Vienna and the next year the other eye operated in Wiesbaden. Eighteen months later he was seen by the author. Examination showed him wearing a spherical lens which gave him a vision of 0.3 in each eye. When the astigmatism was fully corrected he had a vision of 1.3 in each eye. Another example is given of a woman, age 65, whose left eye was hopelessly damaged, probably from using it too soon after operation with a subsequent chronic uveitis which had left vitreous opacities.

Jackson points out "that ample time, often several months, must be allowed the eye for recovery after operative treatment that so disturbs its whole nutritive mechanism." He notes further that many times when both eyes of an individual have been operated, it is the eye that takes the longest to recover, that has the best result.

There are four cases in which cataract is complicated by glaucoma. Two patients had an increase in tension following needling for capsular opacity. This was controlled by miotics. One other had a chronic glaucoma before lens extraction; vision was but slightly improved. The other was a lady, age 56, that had bilateral acute glaucoma while recovering from facial erysipelas. One eye required an iridectomy while the other recovered with the use of physostigmine. Ten or eleven years later the author saw the patients for cataracts. Glaucoma at that time was absolute in one eye. There was good light perception in the other eye; lens extraction gave her a vision of 0.1 which she had kept for two years afterward.

Four cataracts associated with tetany are reported. Calcium, parathyroid and thyroid were given ineffectually. Lens extraction gave normal vision in all four eyes.

The author's experience tends to confirm the idea that probably myopia may have something to do with the formation of cataracts. He reports that he has found that these eyes "bear extraction of cataract as well as most other eyes."

In regard to uveitis he says "The important point is that most causes of uveitis can be removed entirely, and if this is done long enough before the operation the history of previous uveitis is no bar to the extraction of the cataract."

A table of cases accompanies this article. It con-

sists of forty-nine cases, age of patient at operation, age of patient when last seen, complications, vision before extraction and vision after extraction.

The technic of the operation, as it is done by the author is given in detail. Discussions by Dr. Allen Greenwood, of Boston, and Dr. Edward C. Ellett, of Memphis, are included.

Dr. Jackson's closing paragraph: "Certainly the point that the general structure and the relations of the eyeball should be as little disturbed as possible in the operation for cataract is an important one to have in mind in every manipulation of the instruments that one makes at the time."

Surgical Treatment for Suppurative Petrositis. A Critique. Samuel J. Kopetzky, M.D., New York. Archives of Otolaryngology, September, 1937.

This paper was read at the Forty-Third Annual Meeting of the American Laryngological, Rhinological and Otological Society, Inc., Atlantic City, N. J., June 4, 1937.

Kopetzky was one of the original investigators of suppurative petrositis. His paper has the following summary:

"Surgical operation on the petrosal pyramid should be limited as much in extent as the situation of the lesion permits. No one advocated procedure is applicable to all types of involvement and to all the varying lesions which may be presented in the pars petrosa.

Diagnosis should endeavor to recognize the lesion while it is still intrapetrosal. The factors determining an advancing and progressing lesion must be differentiated from those characteristic of one that is in recession and from which recovery is to be expected. In this connection, recognition must be given to the fact that many petrosal infections heal spontaneously after the performance of adequate simple mastoidectomy.

The simple mastoidectomy alone will suffice usually only when the lesion is limited to the posterior labyrinthine area.

Complete simple mastoidectomy and the location of a posterior labyrinthine fistula suffice, provided the operation is promptly followed by a remission of all symptoms and this improvement is permanent.

When the lesion is located in the area encompassed by the epitympanic space, the Voss procedure may be used. Its results must be judged by prompt remission of all symptoms, as are those of the complete simple mastoidectomy.

When anterior labyrinthine fistulas are suspected or enclosed empyema of the tip area is diagnosed, a complete radical typanomastoidectomy combined with search for such fistulas should be undertaken. When found, such fistulas should be adequately drained. Nothing more is needed if symptoms from the petrosal infection then subside. If, however, the clinical picture instead of subsiding, continues or increases in intensity, the Almour technic is indicated to evacuate encapsulated empyema. Roentgenograms will furnish material diagnostic data.

If after one has established adequate drainage from spontaneously formed fistulas or by the Almour procedure the patient nevertheless continues to present increasing signs and symptoms threatening extrapetrosal rupture or meningeal infection, the Lempert technic holds out the best means of completely removing the purulent focus within the pars petrosa and should be undertaken.

Almour and I have handled forty-six cases of proved purulent infection in the petrosal pyramid. In ten cases there was a posterior labyrinthine fistula. In twenty-one there was an anterior labyrinthine fistula. In four there were an anterior and a posterior fistula. In seven there was enclosed empyema of the pars petrosa. In eleven meningitis was present prior to our operative procedures, and four of the patients died. There were eight deaths and thirty-seven cures in all. In three of our cases evacuation of the purulent material took place through a gravity abscess in the lateral pharyngeal wall. We had one patient with meningitis who has recovered. We performed a simple mastoidectomy ten times and drained fistulas. We performed a radical mastoidectomy twenty-five times and drained fistulas. We operated by the Almour technic for enclosed empyema eight times. We used the Lempert technic three times, with three cures. In one case the condition was recognized but no operation was done except simple mastoidectomy. This was the first case of our series, in which the lesion was studied at autopsy and which started us on this work.

We have observed many cases in which the condition was diagnosed by others as petrosal involvement but in which the symptoms did not meet our criteria for establishing the diagnosis. These are not included in our record, nor are the few cases we observed in which there was a symptom-complex of petrositis and in which healing occurred without resort to additional surgical treatment. In these cases there was no pathologic proof of petrosal involvement. This summary comprises only cases in which a pathologic condition was demonstrable in the pars petrosa."

The use of Radon in the Treatment of Metastatic Carcinoma of the Choroid. P. Jameson Evans, Birmingham. British Journal of Ophthalmology, September, 1937.

This is a case report of a female, age 41, whose chief complaint in December, 1935, was a foreign body in her left eye. Examination did not show a foreign body to be present. In January she returned complaining of defective vision in this left eye, which became progressively worse for a fortnight. It was at this time that a history was obtained of having had the left breast removed in 1932 for carcinoma. The fundus of the left eye showed a pale exudate. Metastatic growth being considered, the left eye was excised. The pathological report was 'secondary adeno-carcinoma.'

March 9, 1936, the patient came in complaining of dimness of vision in the right eye. Examination showed a spreading detachment of the retina, which was similar in appearance to that observed previously in the left eye. The following operation was done: The conjunctiva was cut in a semicircle below from three o'clock to nine o'clock and resected widely. The inferior rectus muscle was cut and retained with a catgut suture. After exposure of the lower half of the sclera, four radon seeds were stitched to the sclera. A thread was attached to each seed for purpose of withdrawal. The rectus muscle was re-sutured in its original position. The radon seeds were removed at the end of a week without reopening the wound.

April 17, 1936, vision was slightly improved but the fundus picture remained the same. A gradual improvement was noted however and on May 29, 1936, recovery of vision was complete.

October 21, 1936, because of a réoccurrence of the signs and symptoms the radon seed implantation was repeated and the era extended. Complete

recovery of vision did not follow or had not up until January 1, 1937.

The author's summary is as follows:

- (a) The occurrence of bilateral metastatic carcinoma of the choroid during a period of three months, two months elapsing between the incidence in the left eye and that in the right eye.
- (b) The confirmation of the pathology in the case of the left eye and the exactly similar appearance of the right eye at a later date put the diagnosis in the second eye beyond doubt.
- (c) The method of application of radon seeds to the sclera.
- (d) The latent period, following the operation, of some two or three weeks before much appreciable change in the appearance of the growth took place; the progressive nature of this change over some two months; the widespread choroidal reaction which also was progressive for about the same period.
- (e) The complete replacement of the retina upon the disappearance of the growth with full return of the visual field and of visual acuity.
- (f) Absence of any sign of recurrence in the eye over a period of seven months.
- (g) The successful application of radon a second time resulting again in disappearance of the tumor.
- (h) The gradually increasing glandular character of the metastatic growths as compared with the primary breast tumour.

Microscopic sections of the left eye and the breast and axillary gland are reproduced as well as the appearance of the right fundus before and after operation.

Tuberculous Ulcerations of Mouth and Pharynx. F. C. Ormerod. *The Journal of Laryngology and Otology*, October, 1937.

Sir William Milligan is quoted: "The nearer tuberculosis of the respiratory tract gets to the surface the more serious it is, and the shorter the patients' remaining life." When the larynx, tonsil and fauces are involved the case may be expected to terminate in two to three months. However if the lesion occurs in the mouth or on the tongue, it is more responsive to treatment and as a rule the patient lives longer. If the floor of the mouth, gums and lips are the site of the lesions, the prognosis is not so good.

The basis of this report is an analysis of 17,000 cases examined in the Throat Department of the Brompton Hospital in the past fifteen years, about two-thirds of these had a tuberculous infection of the chest; the others had a non-tuberculous chest condition. The following was found: 3,120 cases of tuberculosis of the larynx; 22 cases of tuberculosis of the tonsil; 32 cases of tuberculosis of the pharynx, 4 of the post-nasal space and two of the lips.

For the past five years the cases were as follows: twenty-one in the mouth and pharynx (thirteen males and eight females); in tuberculosis laryngitis about the same proportion was shown. Disease of the mouth and larynx seemed to occur in a slightly younger age than in the larynx.

The tuberculous lesion in the pharynx and mouth follow the disease of the lungs. It is not found in the early stages. By the author it is considered a bad sign when it appears in the pharynx

and mouth as it indicates a break-down in the resistance of the patient.

The ulcers are illustrated by the author with drawings. They are flat with an irregular edge, not deep; slightly undermined edge; base granular and covered with tenacious mucus. One of the complaints of the patient is suffering from an abundant outflow of mucus, which necessitates constant spitting and swallowing. In pharyngeal cases, the chief complaint is pain. Swallowing is difficult and painful so that the patient avoids taking food to escape the pain of swallowing it. As a result, due to semi-starvation and a rapid decrease of resistance, the patient goes downhill rapidly.

Ten illustrative cases are reported. The author's closing is:

"I have tried lactic acid, and guaiacol, and trichloroacetic acid, but the best of all treatments is diathermy.

"Diathermy is better in the mouth and pharynx than the galvanocautery, though I prefer the cautery for the larynx.

"Diathermy is applied under cocaine anaesthesia and a needle electrode is used for the edges of the ulcer, and a ball or button electrode for the base."

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Incontinence of Urine in the Female, the Urethral Sphincter Mechanism, Damage of Function, and Restoration of Control. By William T. Kennedy, New York City, New York. *American Journal of Obstetrics & Gynecology*, October, 1937, Page 576.

This is a report of 28 patients operated upon for incontinence of urine in the female with a discussion of the cause of such incontinence and the operative technic employed by Kennedy.

The fundamentals underlying urethral sphincter control have been determined by Kennedy to include an involuntary muscular sphincter and a voluntary muscular sphincter derived from fibers originating in the white line of the pelvis. He points out that the involuntary sphincter is frequently damaged during labor because scar tissue from trauma attaches the urethra to the pubic rami and therefore prevents normal function of the circular muscle fibers. In addition to this it was also his contention that the medial union of the involuntary muscle fibers is either defective at birth or is injured during labor.

The basis for operative procedure lies, therefore, in two principal phases—1. Thorough and complete mobilization of the urethra from the pubic rami followed by sutures to join the uninjured urethral covering in the mid-line below the urethra, thereby permitting unimpaired involuntary muscle function. 2. Suture of the loose ends of the voluntary muscle fibers beneath the urethra. He considers it necessary that the urethra be exposed throughout its length and that the initial suture line must approximate the tissues which have been freed throughout this entire area.

The operative technic is well described.

Of the 28 cases reported only one failed to have a good result and the only complete failure was one whose operation was followed by an infection with slough in the anterior vaginal wall.

The complications experienced by Kennedy

were cystitis and trigonitis and in one patient accidental laceration of the urethra during repair with subsequent leakage. (This case was subsequently re-operated upon satisfactorily.)

In the discussion Dr. Thomas C. Peightal reports that the Kennedy procedure has been employed at the Roosevelt Hospital for the past year in 15 patients with incontinence. All satisfactorily with the exception of one who leaks occasionally on severe coughing.

COMMENT

This article is abstracted because most of the operations for incontinence of urine in the female have been unsatisfactory. The more simple plans such as the Kelly operation have been safe but the results were not as certain as could be hoped. Many extremely complicated procedures have been advised and used with considerable complications and unexpected results. This is not an uncommon condition in women and its correction with some surety is an extremely important field of treatment. The reasoning underlying Kennedy's conception of the sphincter mechanism and the results of the operations performed certainly justify the employment of this procedure in most cases of incontinence, reserving the simpler Kelly operation for the milder incidences of incontinence where it has always been quite satisfactory.

Wendell Long.

The Effect of Pregnancy on Malignant Tumors.
By Frank R. Smith, New York City, New York.
American Journal of Obstetrics and Gynecology,
October, 1937, Page 616.

This is a report based upon a group of 54 patients suffering with malignant tumors who have also had one or more pregnancies occurring simultaneously or following the treatment of the tumor. All of these patients have come under the observation of the author.

While this is a reasonably small number of patients, it is a valuable report because most of the information about these associated conditions has been based upon the reports of isolated cases of malignant tumors complicated by pregnancy. There has been, therefore, a variance of opinion, most contending that the pregnancy had a harmful effect but others from their limited material concluding that pregnancy had a beneficial influence.

The rarity of the combination of malignancy and pregnancy is best explained by the fact that the majority of patients developing malignant tumors are beyond the child-bearing age or in the last decade of child-bearing age.

A summary is given of each of the 54 histories and quite elaborate tables presented for statistical review.

The justifiable conclusions which are drawn by the author from this group of patients furnish excellent crystallized opinion relative to the effect of these conditions and the best means of treatment. They follow.

"I. Concerning the Patient:

- A. Pregnancy is detrimental to, and should be prevented in patients having unarrested malignant tumors.
- B. Growing malignant tumors may be temporarily retarded by pregnancy but the growth is accelerated after the termination of the pregnancy.
- C. Pregnant patients with malignant tumors have a better prognosis:
 1. If the pregnancy is not interrupted;

2. If the pregnancy follows treatment of the tumor rather than occurring simultaneously with it. This is true whether the length of life from the time of treatment of the tumor or the length of life from the beginning of pregnancy is taken for comparison. The latter gives a more accurate measure of the effect of the pregnancy upon the tumor;
 3. If, in patients becoming pregnant after the tumor therapy, more rather than less than two years have elapsed since the tumor therapy;
 4. If, in the breast and nongenital groups, the patient is not aborted, regardless of the time relationship of the pregnancy to the occurrence of the tumor. This is possibly also true in the genital group, but in the early months of pregnancy the patient is usually aborted by the tumor therapy anyhow. In this series no patient in the genital group became pregnant after the tumor therapy;
 5. If the breast and genital tumors are treated before the end of the pregnancy. It is of distinct advantage to the patient to treat these tumors and ignore the pregnancy, but it is better for the patients with certain nongenital tumors not to be treated until the pregnancy is ended, especially with melanoma.
 - D. As to the stage of the pregnancy (using four months as an empirical borderline) when the patient was first seen: If the patient is aborted, there is some slight advantage in early over late abortion in the nongenital group, but a distinct disadvantage in the breast group and total. All groups fared better if not aborted, regardless of the stage of the pregnancy when first seen.
 - E. As to Parity: Abortion was especially disastrous to primigravid women, whereas both primigravid and multigravid women did about equally well if not aborted.
- #### II. Concerning the Fetus:
- A. Irradiation of breast and nongenital tumors in pregnant women has no tendency to produce malformed babies.
 - B. In the genital group irradiation of the pelvic regions will usually produce abortion in the early months of pregnancy. This series sheds no light on the effect on the fetus of irradiation of the pelvis in the first half of pregnancy because no patient receiving such treatment went to viability.
 - C. In the latter months of pregnancy carcinoma of the cervix can be irradiated locally without affecting the baby or producing abortion.
 - D. Of 41 known viable normal offspring at birth, only 25 could be traced at the present time. These show no evidence of any bad effects of tumor therapy at the present time (one to ten years of age)."

COMMENT

While this combination of conditions is rare, this report has a particular significance because malignancy is frequently suspected in the breast and genitals during pregnancy. From the information included in this article and from other sources, it is quite evident that the rules for diagnosis and treatment are practically unchanged during pregnancy. One must have positive evidence of diagnosis and then treat suspected tumor according

to its character. It will be found most frequently that the tumor is not a malignant growth. This does not minimize the necessity for most careful study and biopsy examinations to prove the character of suspected malignant lesions associated with pregnancy as well as without.

Wendell Long.

Fascial Suture Operations for Hernia. Summary and End-Results of One Thousand, Four Hundred Eighty-Five Operations. By Carl G. Burdick, David H. M. Gillespie, and Norman L. Higginbotham. *Annals of Surgery*, September, 1937.

The authors began the use of fascia for the repair of certain types of hernia at the Hospital for Ruptured and Crippled, New York, a little over ten years ago. The method was employed particularly in connection with direct inguinal hernia, a combination of direct and indirect inguinal hernia, large scrotal hernia in which the canal had lost its obliquity and the internal ring lies approximately behind the external ring, in all forms of recurrent hernia, and all ventral hernial, including the umbilical and epigastric types.

It the main, autogenous fascia, from the fascia lata, has been employed, but in the early part of the series of over fourteen hundred operations homologous fascia was sometimes used, and, occasionally, ox fascia.

The authors have come to the conclusion that the employment of fascia has been followed by a recurrent rate that is too high; that the large needle and bulky fascia produces a "weak spot" that predisposes to a recurrence; that the percentage of infection "was higher than it should have been and we were unable to reduce it appreciably."

Contrary to the report by Gallie and LeMeusnier, the authors have found but little evidence of the fascia formerly used in an operation when it was necessary to do a subsequent operation because of recurrence.

Infection of the operative area occurred in 8.9 per cent. The percentage was not quite as high in the autogenous fascia cases, it being 7.9 per cent, while the homologous was 12.8 per cent and the ox fascia 12.1 per cent.

The fourteen hundred eighty-five operations were done on 1092 patients. Sixty-eight per cent of the patients were traced for one year or longer. There was recurrence in 107 in less than one year and in 177 after one year.

The following are the conclusions of the authors:

"One thousand four hundred eighty-five fascial suture operations for the repair of all types of hernia are fully analyzed with particular reference to the percentage of recurrence.

- (1) Infections are more common in herniae repaired with fascia than in those in which other forms of suture material are used.
- (2) The incidence of infection in our series is lowest in the group repaired with autogenous fascia (7.9 per cent); it is much higher in those repaired with homologous fascia (12.8 per cent) and ox fascia (12.1 per cent.)
- (3) The number of recurrences is discouraging. it is true that fascia repair was reserved for only the more difficult types of hernia but we had hoped for more encouraging results.
- (4) The introduction of a large needle through

the transversalis fascia and Poupart's ligament frequently left a weak spot which predisposed to a recurrence.

- (5) The fact that in many of our reoperated cases we were unable to find any evidence of the previously used fascial sutures forces us to conclude that the theory of fascial sutures for hernia repair is based on an erroneous principle."

LeRoy Long.

Reflexion Sur Le Syndrome D'Embolie Arterielle Des Membres (Consideration of Embolism of the Arteries of the Extremities). By Marc Iselin and R. Heim de Balsac. *La Uresse Medicale*, September 29, 1937.

This article is apparently based, primarily upon observations in connection with four patients upon whom surgical operations were done for what appeared to be embolism of the arteries of the extremities.

The first patient mentioned was a woman of 81. She had mitral decompensation. There were signs of embolism of the upper right arm ("du membre superieur droit"). She was seen 46 hours after the first symptoms appeared. The forearm was cyanotic, the hand cold and pale, the fingers in semi-flexion. There was no evidence of pulsation of artery distal to the subclavian. An operative incision was made so the axillary artery could be approached. The artery was opened and a clot six centimeters long removed. In half an hour the pain had disappeared. In the late afternoon the hand appeared to be quite normal, and the fingers were souple. The patient was discharged from the Clinic in four days. She died two months later of a massive hematemesis.

The second patient was a woman 37 years of age. There was mitral decompensation. She was seen five hours after an attack of pain in the lower abdomen, associated with absence of pulsation in any of the arteries of either lower extremity. There was a diagnosis of embolism at the bifurcation of the aorta. A laparotomy was done, the aorta being incised. There was escape of black and sticky blood. No clot was found. Thinking that the obstruction might be lower down, the external iliac was incised, but no clots were found. The internal iliac was incised with the same negative finding. The operative wounds in the vessels were closed. About that time there seemed to be a return of pulsation in the arteries. In the afternoon of the day of the operation the legs were of normal color. The pain had ceased. Oscillations, determined by the instrument of Pachon, had returned, but the patient was weak. She lived 10 days when there was death due to uremia. Now there is a statement that should be pondered, for the authors say that autopsy showed integrity of the arterial system. In this connection the authors ask the question, "Was the result due to incidental sympathectomy?" In other words, were the symptoms and signs, interpreted to be symptoms and signs of arterial obstruction due to embolism, the expression of arterial spasm?

The third patient was a man 37 years of age. There was heart disease with decompensation. The attack began with moderate pain in the axilla, followed by ischemia of the arm and hand on the same side. A surgical operation was done. The axillary artery was incised and a clot 15 cm. (about six inches) long was removed from the axillary artery. Blood flowed from behind. There was some difficulty in closing the opening in the artery. In contrast with the second patient, there was no relief. Four days later there was a dis-

articulation of the elbow because of gangrene of the forearm. This brought no relief, and the patient died. The autopsy revealed that all the branches of the arterial system in the arm were filled with clots.

After the report of the case of the third patient the authors make this query: "How is it possible to explain an embolism made up of a series of clots not only in the principal artery but in all the collateral branches as well, the upward limits of all of them being at the root of the arm?"

The case of the fourth patient will not be reported here, but it was quite as bizarre as the others.

The authors have a theory that the arrest of arterial pulsation (presumably due to spasm) is the primitive phenomenon, and that the appearance of clots in the vessel are secondary phenomena.

COMMENTS

In this rather unusual article, the authors, in a more or less indirect manner, emphasize the importance of angiospasm in connection with evidences of impaired circulation, especially in those patients who have degenerative processes of the cardio-vascular system. In our judgment, it is a possibility that should always be considered.

LeRoy Long.

Cancer of the Duodenum (Le Cancer Du Duodenum). By Dimitresco-Popovici, Bucarest. La Presse Medicale, December 8, 1934.

Primitive cancer of the duodenum is extremely rare. When present, it is most often an invasion from cancer of the pylorus, from the canal of Wirsung or from the common bile duct.

R. Gutmann is quoted as saying in a book that he has written that cancer of the duodenum may be found in three localities. The first is cancer above the level of the ampulla of Vater. In this locality it is practically never found. In that connection, Mateer and Hartmann report only six cases of primary cancer of the duodenum in 176,000 admissions to hospital.

It appears that cancer of the duodenum is most often found in the second locality named—that is, on a level with the ampulla of Vater. In that case it seems pretty clear that the cancer usually arises from the ampulla, or, perhaps, from aberrant pancreatic tissue. Geiser, Cole and Roberts, Pie and Schuller are quoted in connection with this statement.

The author states that he has not been able to find in the literature any report of cancer localized in the third portion of the duodenum—that is, that portion distal to the ampulla of Vater. ("Nous n'avons pas trouve de cas de cancers localises dans la 3 ieme portion duodenale, au cours de nos recherches bibliographiques.")

With reference to the etiologic relation of biliary lithiasis to cancer of the duodenum, Schuller, and Forge and Chauvin are quoted to the effect that out of 86 cases of cancer in relation with the ampulla there were but 11 cases with co-existing biliary lithiasis.

In the course of the article the case of a patient, a man 47 years of age, who had been ill for six months, and whose subjective symptoms were pain in the epigastric region, pain about the waistline and in the back, with vomiting of acid material after meals, is reported.

Examination, including radiographs, led to the conclusion that there was a perforating ulcer of the stomach into the pancreas, and that there was

probably a neoplasm in immediate relation with the pylorus. An exploratory operation was performed, and during the manipulation there were accidental ruptures of the distal portion of the stomach, necessitating an emergency gastropylorotomy. The patient expired the next day. Autopsy disclosed an ulcer of the lesser curvature of the stomach perforating into the pancreas. The mucous membrane of the stomach was atrophied, and here and there were other ulcerations. The walls of the pylorus were completely replaced in several areas by connective tissue, but as one approached the duodenum the connective tissue gave way to muscular tissue. The histo-pathological report was: (1) chronic gastritis. (2) cylindrical epithelioma of the duodenum.

After discussing the report of the pathologist, the author is apparently unable to come to a satisfactory conclusion as to the relation between the gastric ulcer and the epithelioma of the duodenum. However, the article is terminated by certain statements that would indicate a belief that there was a very direct relation between pathology of the stomach and the cancer. He says that the practical deductions in connection with the case are: 1. That, from a surgical point of view, there should be an extensive gastro-pylorotomy, with ablation of the duodenal bulb, in the course of ulcer of the lesser curvature of the stomach in close relation with the pylorus. 2. That there should be a systematic histological examination of all the material removed at operation which would probably give exact information about the frequency of neoplastic transformation of the duodenum in the course of an ulcer of the stomach in which there has not been malignant transformation.

LeRoy Long.

PLASTIC SURGERY

Edited by

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Foreskins as Skin Grafts. F. Ashley, Brooklyn, N. Y. Annals of Surgery, August, 1937.

The author states that of the methods used to cover large denuded areas, not one is simpler than the use of circumcised prepuces. Any hospital having an active maternity service, he states, affords all the necessary material. If desired as grafts, but not required immediately, they may be kept in physiologic solution of sodium chloride in a refrigerator or may be embedded in ice cubes. They can be used not only where thin skin is required but also where thick skin has been destroyed, e. g., on the sole of the foot, as the general tendency of any graft is to take on the characteristics of the skin in its new location. These grafts might be used for chronic ulcers, and to cover amputation stumps. The author does not dispute the superiority of autografts over isografts. Nevertheless his experience with the use of prepuces has convinced him that they are well worth using. He suggests that all foreskins available be saved. To avoid syphilitic infection it would be wise to investigate the donors carefully, although it is not likely that the spirochete will survive when the foreskins are preserved.

COMMENT: I cannot share in the enthusiasm the author displays in the use of foreskins to cover large denuded areas for the following reasons: 1. I doubt that any such grafts will live and grow into a useful integument. 2. Isografts have not

been proved practical. They do not survive. 3. The aesthetic feature is definitely against the use of such material. 4. I do not believe any such graft used as a full thickness transplant will survive, for as long as a few days. 5. In cases that require extensive grafts one is wise to use either small thick grafts or large split grafts. 6. The author admits spirochetes will not survive the "cold storage" period and I doubt that the foreskins will survive.

Treatment of Epithelioma of the Lip by Electrodesiccation. Howard Morrow, M. D., Hiram E. Miller, M. D., and Laurence R. Taussig, M. D., San Francisco. Condensed from *Archives of Dermatology & Syphilology*, May, 35: 821-830.

The authors describe the treatment of early stages of epithelioma of the lip which can readily be carried out in ambulatory patients. It is desirable to complete the destruction or removal of all neoplastic cells with as little damage to normal tissue as possible, in order to preserve function and to produce the best cosmetic result.

Surgical therapy results in a high percentage of cures, if properly done, but there is considerable loss of normal tissue and in most instances it is a hospital procedure, which adds to expense and intimidates the patient.

Irradiation also cures a large percentage and is of outstanding value in the palliative treatment of inoperable and extensive lesions. The chief shortcoming of radiation is that the resulting scar may, in course of time, exhibit the usual after effects of intensive radiation, such as atrophy, telangiectasia or keratosis. The damage done to adjacent normal tissue increases the difficulty of treating a recurrence or new malignant growth in the same area. There is also a lack of material for microscopic examination.

Cautery may be effective but all cauterizing methods sacrifice a considerable amount of normal tissue in order to be certain of destroying all malignant tissue.

Various combinations of these methods have been used, especially surgery plus irradiation.

For the past five years the authors state they have regularly treated epithelioma of the lip by means of curetage followed by electrodesiccation. The area is anesthetized by injecting 1 or 2 cc. of a 2% solution of procaine hydrochloride around the lesion. The lip is compressed between the thumb and forefinger and the pulpy tissue removed by a sharp curet. This permits a more accurate survey of the extent of the field of the lesion than can be obtained by inspection and palpation.

In most cases there is little or no bleeding. A piece of biopsy tissue may be removed with a biopsy punch before curetting is started or the curetted material may be saved for this purpose. The growth frequently shells out showing a line of demarcation between it and the normal tissue. After curettage the area is treated with a rather intense monopolar current the tissue being desiccated to a depth of 2 or 3 mm.

The lesion is dusted over with an antiseptic powder once or twice a day. A dressing is rarely required. In the course of 10 days or two weeks the slough separates and the area heals in about six weeks. The resulting scar is frequently thick at first but in the course of a few months it usually flattens out, leaving a surprisingly insignificant slightly indurated area.

The one complication is hemorrhage; it is encountered in about one in 12 cases and usually occurs when the slough separates. It is generally not

severe and yields to the compressing of the lip for a few minutes between two fingers.

The treatment outlined is particularly adapted to early lesions which have not penetrated the muscle. Long standing lesions with palpable metastatic masses in the cervical lymph nodes are referred to the surgical or to the roentgenologic department. Instances of keratotic lesions of the lip which are only suspected of having undergone malignant degeneration are treated as if they were early stages of epithelioma. Most surgeons now believe that gland dissection is indicated only in the presence of palpable lymph nodes. The routine irradiation of the cervical region in the absence of palpable nodes as a prophylactic measure is of doubtful value.

The authors state that they have treated 139 patients by the method described. Of these 59 could not be traced. Of 80 who were traced, 66 are well at six months to five years after treatment, one cured elsewhere, two dead from cancer of the lip, eight died from other causes and three are not cured. A number of the patients classified as well have had recurrences which responded to the same form of treatment. The two patients who died of cancer of the lip had indurated, rather extensive lesions extending onto the inner surface of the lip and buccal mucosa; we no longer treat lesions of this kind by desiccation.

COMMENT. The authors have succeeded in curing early epithelioma of the lip by electrodesiccation. They have recurrences just as men using other forms of treatment encounter.

At the present time we have close co-operation between radiologists and the plastic surgeon which allows for an opinion to be rendered at any stage of the treatment. The cases that are best suited to surgery are culled out and given the benefit of surgery.

It is true that a biopsy in a great many lesions is definitely desirable and some cases cover the non-malignant nature of the lesion.

Dr. Wyeth of N. Y. has been apparently very successful in the use of low monopolar currents applied to epithelioma. The author in this case uses a rather intense monopolar current.

INTERNAL MEDICINE

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BY HUGH JETER, M.D., F.A.C.P., A.S.C.P.
Some Clinical Caprices of Hodgkin's Disease by
William S. Middleton, F.A.C.P., Madison, Wisconsin. *Annals of Internal Medicine* Vol. 11, No. 3, September, 1937.

This is a very comprehensive report including a brief review of the history of the disease, referring to important investigations by various authorities and making mention of many different clinical manifestations of the disease. Twenty-nine interesting cases are reported and by these the many "caprices" are amply illustrated and discussed. The author indicates how closely the clinical picture conforms to our accepted description of Hodgkin's and also in a most interesting manner points out the diversified range of the disease.

Age, skin manifestations, neural involvement, bone involvement, visceral involvement, constitutional manifestations, blood and concurrent tuberculosis and Hodgkin's disease are the principal

headings of this long (20 page) article but many important subheadings are also nicely discussed and illustrated.

Laboratory findings are not emphasized but mention is repeatedly made of the fact that expert hematologists may find helpful aids from the blood picture. He concurs with Bunting in emphasizing the principal involved in connection with the blood picture in that there is considered at least in some cases to be a lymphoid resistance or lymphocytosis early in the disease and later in the course lymphoid paralysis or a marked decrease in the percentage of lymphocytes found. If the blood can be followed consecutively, this phenomena is considered to be a worth while value in connection with prognosis.

Blood platelets are increased in virtually all cases. Anemia of the hypochromic microcytic variety is the rule and may become profound.

The basal metabolic rate should be elevated during periods of clinical activity.

Gordon's studies upon the central nervous system changes incident to the intracerebral and intravenous injections of emulsified lymph nodes are considered to offer no material diagnostic assistance. X-ray examination of mediastinum and also of the bone may be of considerable aid in an occasional case.

UROLOGY

Edited by D. W. Branham, M. D.
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Clinical Excretion of Bismuth. Sollman, Cole and Henderson, Cleveland, Ohio, *Americal Journal of Syphilis and Gonorrhea*, September, 1937.

A report of the results obtained from a study of various bismuth preparations so far as their rate of excretion was concerned. This study has been in progress for some time and this article particularly details the findings as regarded to two newer preparations, thiobismol and iodobismitol.

Thiobismol proved to have a very rapid absorption in which a high blood concentration of bismuth was obtained within a few hours following administration. The rate of excretion was also correspondingly rapid with a therapeutic level of concentration in the blood continuing no more than

three days. Repeated injections of the drug failed to produce a cumulative effect due to the fact that excretion is sufficiently fast to prevent this occurrence.

Iodobismitol, so far as absorption is concerned approached the insoluble type of preparations of bismuth, however, with a slower rate of absorption than thiobismol and correspondingly a slower rate of excretion. It was stated that two injections of iodobismitol weekly will maintain the same concentration of bismuth in the blood stream as three injections of thiobismol.

A summary as to the relation of the foregoing conclusions to the practical therapeutics of syphilis was made. The author states where a rapid bismuth effect is wanted and when the arsenicals are contraindicated, the soluble forms of bismuth, of which thiobismol is an example should be administered at frequent intervals, three times weekly.

However, when the effect wanted is a more prolonged one, or as he describes it to "consolidate" the gains of the arsenicals, then the slower absorptive preparation is a better choice of drug. Iodobismitol or the more commonly used sodium potassium bismuth tartrate suspension in oil serves the latter purpose more satisfactorily.

Acute Gonococcia Perihepatitis, Frank H. Redewill, San Francisco, California, *Urologic and Cutaneous Review*, October, 1937.

The author discusses this relative unusual complication which occurs in young women suffering from pelvic infection of gonococcal origin. He is of the opinion that such a condition happens more frequently than reported in the literature.

The pathology of extension of gonorrheal infection to the upper abdomen is based on the fact that the lymphatic drainage of the peritoneum drains upward through the diaphragm and organs may follow this pathway and localize in the right subdiaphragmatic region. As an aftermath of such inflammatory reaction there is produced adhesions between the liver and diaphragm, the so-called "violin string" adhesions.

In most instances the condition follows long standing pelvic inflammatory pathology and the signs and symptoms simulate acute gall bladder disease, diaphragmatic pleurisy or acute pyelonephritis. The author recommends hyperpyrexia as the best treatment for this condition.

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THE JOURNAL

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Number 12

Food Allergy*

The Value of the Leukopenic Index in Food-Sensitive Patients

RAY M. BALLYEAT, M.D.
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The protean manifestations of the allergic state have made the medical profession realize the importance of the field of allergy. Today it is conceded that a large number of symptom-complexes may be wholly or partially due to contact, inhaled or ingested allergens. That food allergy plays an important role in many cases of dermatoses, hay fever, asthma, allergic headaches, and symptoms referable to the gastrointestinal tract is well recognized. The evaluation of the food factor in allergic diseases is much more difficult than that of the other two possible allergic groups, namely, the contactants and the inhalants.

Those working in the field of allergy have found that skin testing is much less reliable in patients suffering from allergic symptoms due to the ingested group than where it is due to the contact and inhalant groups. For this reason, other methods, such as elimination and addition diets, as suggested by Rowe, and the leukopenic response to food, as suggested by Vaughan,^{1,2} have been added to our allergic diagnostic armamentarium. Only a few have been able to use the diet elimination and addition methods to any advantage. Personally, they have been unsatisfactory in our hands.

The leukopenic index test, recently de-

veloped, offers great possibilities in determining the offending foods in food-sensitive patients.

EVOLUTION OF THE LEUKOPENIC INDEX TEST

The leukopenic index test as a diagnostic method in the study of food allergy was developed in 1933, by Warren T. Vaughan,^{1,2}. The procedure was an outgrowth of the so-called colloidoclastic test for liver function, introduced in 1920 by Widal, Abrami and Iancovesco. In the original liver function test, the patient first had a total leukocyte count and then received a glass of milk. Subsequently, the leukocytes were counted at 20-minute intervals. An occurring leukopenia was considered as pathologic and evidence of hepatic insufficiency. Vaughan observed that many of the patients undergoing the liver function test were allergic. He, therefore, deducted that this test was not a test for hepatic insufficiency but indicated a food sensitivity.

Other workers, such as Gay³, Rinkel⁴, Zeller⁵, Squier⁶, Bowen and Balyeat, have made intensive study of the diagnostic value of the leukopenic index in cases suffering from food allergy and believe it is a procedure of great value. Much credit is due Vaughan, Gay and Rinkel for our present method of making the leukopenic index test and its interpretation.

Early as 1891, it was observed that the leukocytes would vary in relation to the

*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Tulsa, May 11, 1937.

food intake⁷. Later, Adelsberger⁸ showed that the kind of food ingested determined the leukocyte reaction.

TECHNIQUE OF THE LEUKOPENIC INDEX TEST

The following points should be considered in making the test:

1. At least five hours should elapse after eating, before the patient is tested. Preferably, leukopenic index studies should be done in the morning, the patient reporting to the office in a fasting state at 8:30.

2. Two fasting WBC counts are made at ten-minute intervals, and a mean of the two counts is taken; this count is considered the base.

3. The food to be tested is then given to the patient in moderate quantities and should be as palatable as possible. The patient should be comfortably seated and asked to pass the time away by reading or visiting with friends, relatives, or patients. During the period of the test, smoking, going to the lavatory, walking about the halls, etc., should be forbidden.

4. Following the test meal, three additional counts are taken at 20-minute intervals. Then, a fourth count is made 30 minutes later. The same blood pipette and counting chamber should be used, and the same technician should make the counts.

5. Observations concerning nasal itching, sneezing, rhinorrhea, nasal blockage, headache, coughing, wheezing, local or general pruritus, gastro-intestinal symptoms, etc., which might occur during the period of the test should be recorded.

6. The series of counts should be graphically charted.

INTERPRETATION OF THE TEST

From a clinical standpoint, there are usually three distinct types of curves obtained, as has been suggested by Rinkel⁹.

1. *Negative Leukopenic Index*: This is recognized by a post-ingestive increase of leukocytes of at least 1,000 cells, and the counts continue to be definitely greater than the basic count for at least one hour.

2. *Positive Leukopenic Index*: A post-ingestive decrease of 1,000 cells or more, and the counts continue to be definitely less than the basic count for one hour.

3. *Indeterminate Leukopenic Index*: A change of less than 1,000 cells either above or below the basic count.

It has been pointed out by Vaughan¹⁰ and it has been our experience that the higher the fasting white counts, the more likely is there to be a wider fluctuation in the post-ingestive counts. It is possible, therefore, that the required drop should vary, depending on the original fasting count. We would suggest that a drop or increase of 1,000 should be required if the fasting count is from 5,000 to 10,000, while a drop or increase of 2,000 should be required if the fasting count is from 10,000 to 16,000.

CASE REPORTS

I wish to briefly discuss a number of cases of various types of allergic diseases, as a means of demonstrating the value of the leukopenic index as a diagnostic method in the study of food allergy.

ECZEMA AND ASTHMA

Case 1.—C. T. M., female, aged 39, was first seen eight years ago, complaining of seasonal hay fever, asthma, and eczema. Her asthma, hay fever, and eczema all occurred about the same time. Eczema symptoms, at the time seen by us, were severe.

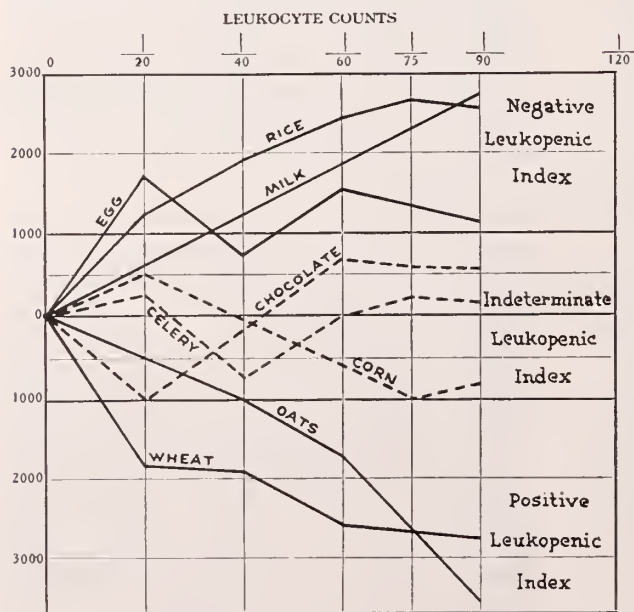


FIG. NO. 1

Illustrating the positive, negative, and indeterminate leukopenic index curves.

Allergic studies revealed marked reactions to pollen, the animal dander group, and to the following foods:

Whole wheat	+	+	+	Soy bean	+	+	+	+
Wheat proteose	+	+		Lima bean	+	+	+	
Wheat globulin	+	+		Buckwheat	+	+		

There was some reaction to a number of other foods. Desensitization was done to the inhalants. Wheat and a number of other foods were taken out of the diet. In a reasonable length of time, she became free from her eczema and also symptoms referable to the respiratory tract. We began to add foods, one at a time, and found

we were able to add all except wheat. During the past eight years, wheat and wheat products have been entirely out of her diet. She still shows large intradermal reactions to this food. She has reported to us that the smallest quantities of wheat, which she would occasionally get in her diet, would cause itching skin, itching of the mucous membrane of the nose, and tightness in her chest.

For the purpose of demonstrating the leukopenic index in a patient who is highly skin sensitive and also clinic-

ally sensitive to a food, this patient was kind enough to let us give her a test meal of crackers and study the blood before and after the ingestion of the wheat product.

It is interesting to note that the 20-minute post-ingestive count was more than 2,000 above the base line. This can be accounted for by the severe nausea and vomiting which occurred at that time. The two-hour count was nearly 3,000 below the base line. While the three small crackers were being eaten, the tongue and lips smarted like she had taken pepper. Twenty minutes later she had symptoms of nausea. This continued for another 20 minutes, at which time she vomited. About one hour following the ingestion of the crackers, she perspired very freely, similar to one in shock. A little later,

BALYEAT HAY FEVER AND ASTHMA CLINIC

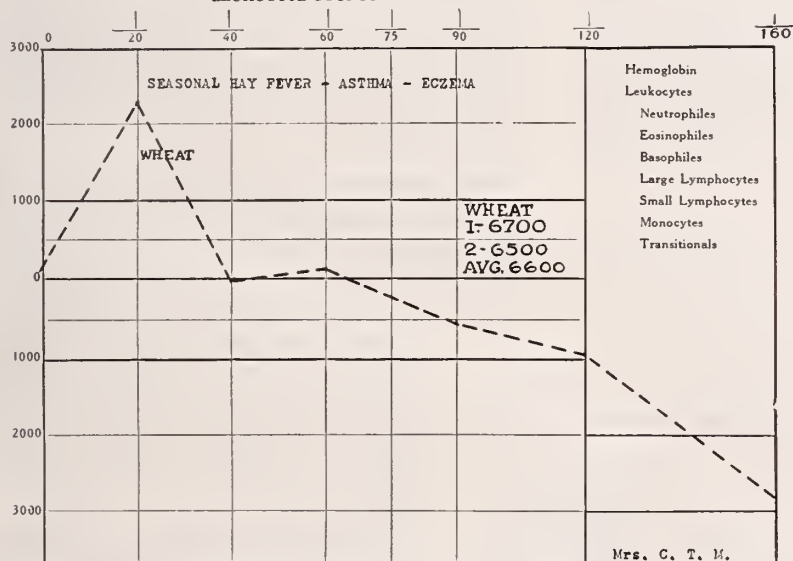
600 Osler Bldg., Oklahoma City, Oklahoma

LEUCOCYTIC AND CLINICAL RESPONSE RECORD

Patient.....No.....Date.....

Testing.....Ingested—Injected—Inhaled Diagnosis.....

LEUKOCYTE COUNTS



Hemoglobin
Leukocytes
Neutrophils
Eosinophiles
Basophiles
Large Lymphocytes
Small Lymphocytes
Monocytes
Transitionals

Mrs. C. T. H.

CLINICAL RESPONSE

1/20 Nausea.			
1/40 Vomiting.			
1/60 Perspired freely, apparently in shock.			
1/90 Lips swelled, voice husky. Adrenalin hydrochloride, 10 minims, given with symptomatic relief.			
1/120 Abdominal cramps.			
1/160 Abdominal cramps persist.			

Nasal Itching
Sneezing
Rhinitis
Nasal Blocking
Coughing
Wheezing
Pruritis
G-I Symptoms
Local Reaction
Systemic Reaction

SKIN TEST
Scratch
Intracutaneous

CLINICAL TEST

FIG. NO. II

Unusual curve to wheat. Considering the ninety-minute and two-hour post-ingestive leukocyte drop and the clinical response, the curve must be called very strongly positive.

her lips swelled, her voice became husky, and there was tightness in the chest. Ten minims of adrenalin hydrochloride had to be given for relief. Previous to the giving of adrenalin, she also complained of crampy pains in the abdomen. These crampy pains continued for several hours.

In this case, the leukopenic index curve is definitely positive. Clinical response symptoms referable to the skin, respiratory system, and gastrointestinal tract developed following the ingestion of the test meal. Clinical response symptoms may occur in a patient whose leukopenic index curve falls in the indeterminate class. However, under such conditions the curve should be called positive.

Many patients who are sensitive to foods will automatically lose their sensitivity when the food is left out of the diet over a considerable period of time. This is not true, however, of many patients who are highly sensitive. Considering the leukopenic index and the clinical response symptoms in this case, it would seem foolish to try to put wheat back into this patient's diet.

MIGRAINE

Case 2.—H. W. H., female, aged 28 years, has suffered from periodic headaches since

childhood. During the past eight years, she has also suffered from indefinite gastric symptoms and hives. Her headaches have been, and were at the time of our examination, associated with evidence of cortical irritation and, therefore, are of the true migraine type.

Intradermal method of testing revealed the following findings:

Wheat	0	Milk	0
Egg	+	Cheese	+
		Cocoa	+

There were a number of other foods to which she was moderately positive. Leukopenic indices were done on wheat, egg, and milk. These counts are charted in graph as shown in figure 3. Of these three foods, only wheat showed a definitely positive leukopenic response. Of the foods found positive by the intradermal and leukocytic response methods, wheat only was taken out of the diet. She has remained free from hives, gastrointestinal symptoms and headaches, except when wheat has been added a number of times for clinical trial.

The patient is interesting because the leukopenic indices did not correspond to the intradermal method of testing. Food elimination based on the leukopenic index findings gave desired results. Food addition and subtraction methods might have been used in finding the offending food in this case, but how much easier and more definite a method we have in the leukopenic index.

PERENNIAL VASOMOTOR RHINITIS

Case 3.—R. B. J., aged 43, has suffered from blocking of the nose and sneezing for the past ten years. His symptoms are typical of perennial vasomotor rhinitis. He has had headaches, non-migrainous in type, the same length of time.

Careful studies were done on this patient six years ago. His general physical examination at that time revealed a normal individual except for the congested nose. Allergic studies revealed mild sensitization to some of the pollen, animal dander, and also to food, but none of the reactions were very definite. At

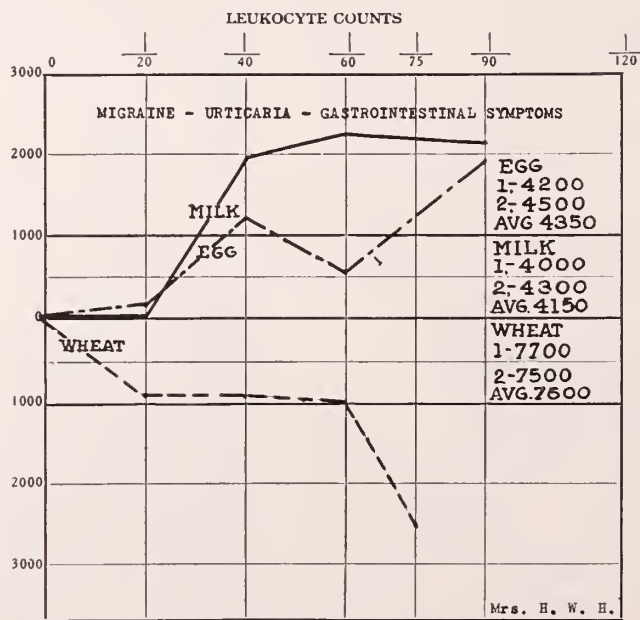


FIG. NO. III

Leukopenic index curves for wheat, egg, and milk. Note the definitely negative curves for egg and milk. Observe the strikingly positive curve for wheat.

that time we started desensitization, using house dust and the ragweeds. This man has been rechecked a number of times during the last six years because results have been poor, in spite of the fact that he has been a very cooperative patient. At no time have we found any indication of infected paranasal sinuses. Nasal secretions repeatedly have shown a predominance of eosinophils.

Recently a leukopenic index was done on the following foods: corn, wheat, milk, potato, egg, and wheat repeated. Of these foods, as shown in figure 4, wheat is definitely positive, and wheat shows a definitely positive curve when repeated, but the other foods give a definitely negative leukopenic index.

He has been on a rather restricted diet, since by repeated testing, by intradermal method, a number of foods have been found slightly positive. At no time during the past six years has wheat been definitely positive by the scratch or intradermal method of testing. After finding the leukopenic index to wheat strongly positive, his diet has been rearranged in such a manner that wheat and wheat products, even to the 'nth degree, are out. A few other foods, such as chocolate, shell sea

foods, watermelon, and cantaloupe, have been taken out of his diet on general principles, but they had been out before.

Within 24 hours after removing wheat from his diet, his nose changed from a completely blocked one, as it stayed that way most of the time, to one fairly normal, and the chronic frontal and facial headache, from which he suffered most of the time, disappeared. He has remained free except for one time when he had a number of slices of rye bread. (He is not sensitive to rye, but rye bread contains 20 per cent wheat.) A couple of hours after eating the bread, he developed nasal symptoms the same as before, but he was free 12 hours later and is now remaining completely free from nasal symptoms.

This man has found that he can be relieved of his nasal symptoms on a wheat-free diet and will develop symptoms again on ingesting wheat. For six years, by careful testing, retesting, food elimination and addition, we were unable to give this man relief from his nasal symptoms. A test to wheat by the leukopenic index method and a repeat proved strongly positive. It is our custom, on obtaining a positive leukopenic index, to repeat the test. By the leukopenic index studies, we found the offending food. We feel that the procedure, although time-consuming, is of great value in the study of perennial vasomotor rhinitis.

BRONCHIAL ASTHMA

Case 4.—A. S. J., female, aged 52, had been a perennial asthmatic sufferer for the past 15 years. Her asthma was very severe, and when first seen by us she had used adrenalin to the extent that she was adrenalin-fast. She was hospitalized, and ether and oil were used per rectum for a number of days, and then adrenalin again gave her relief.

Allergic studies showed marked reactions to the animal dander group and to pollen, but there were a few foods to which she also showed definite reactions, and they are the following:

Wheat	+	+	+	+	Rye	+	+	+	+
Barley	+	+	+	+	Milk	+	+		

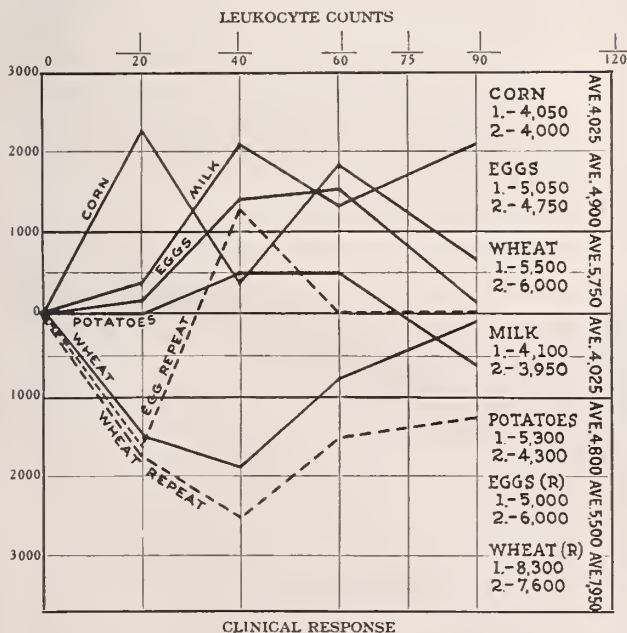


FIG. NO. IV

Showing leukopenic index curves for a number of foods. Note wheat and wheat-repeat definitely positive. All other foods are definitely negative.

There were a number of other foods to which she showed a moderate reaction. On account of the large reaction to wheat and a definitely positive leukopenic index to wheat, as shown in figure 5, we quizzed her carefully concerning the possibility of the ingestion of wheat as an etiologic factor in her asthma. She said she could not detect that the eating of wheat would cause asthmatic symptoms, but she told us, however, that for many years she had been unable to do any kind of baking on account of the effect flour had when inhaled.

In outlining her treatment, desensitization was done with the dust group and the ragweeds. Wheat was taken entirely out of her diet. She became free from asthma rather quickly, making us feel that although her marked sensitization to the ragweeds and to the dust group had much to do with her asthma, yet the ingestion of wheat played a definite secondary part. We have observed this patient over a period of only about three months. She is doing exceedingly well.

It is possible for patients to be sensitive to the dust of a food, such as wheat in this case, and have difficulty on inhalation, but the same food by ingestion would not cause trouble; this we have seen a num-

ber of times. In this case, however, we feel quite sure that wheat has played a definite part in the cause of her trouble, both by inhalation and ingestion. Knowing what we do about the importance of the inhalants in the adult, we would consider house dust and the ragweeds as the primary factors and the wheat secondary.

CONCLUSION

In our study of food-sensitive patients during the last year, the leukopenic index has been done over 2,000 times. It has always been done in conjunction with the scratch and intradermal methods of testing. We feel sure that when one decides on food elimination, both the skin test and the leukopenic index should be taken into consideration. The study of food sensitization by the leukopenic index method is a time-consuming procedure. In spite of this fact, however, it is an added adjunct in our diagnostic armamentarium in allergic diseases that is of great value. It is often the only method by which we are able to find the offending food.

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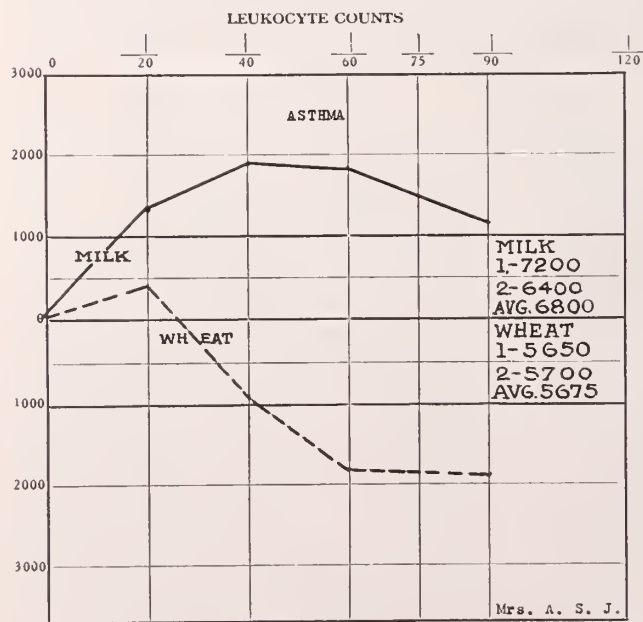


FIG. NO. V

A definitely positive leukopenic index to wheat.

200 MORE IN 1938

There are at least two hundred more men in the state eligible for membership in our Association. Let's make members of them during 1938.

Intestinal Obstruction*

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University Medical School; Chief Surgeon
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Progress in medical care falls into two great divisions. The first deals with the discovery of new principles, new diagnostic and remedial agents. The second deals with the dissemination and application of these discoveries. The operative mortality of intestinal obstruction today is virtually unchanged as compared to that of forty years ago and remains at the appallingly high figure of about 45 per cent.⁹ Of recent years the splendid studies of Wangenstein, Orr, Gatch, McIver, Ochsner, and many others have added to our knowledge of this subject and have enabled these men to obtain lower mortality figures. The problem is a difficult one and much remains to be done. None the less it is of benefit to all of us periodically to examine the present status of our knowledge of intestinal obstruction and see wherein we can improve results.

Recently Wangenstein¹ in summarizing his own studies and those of others has pointed out some considerations which are of importance to any approach to the problem of intestinal obstruction. In obstruction of the small intestines sixty-eight per cent of the gas is accounted for by swallowed air; twenty-two per cent originates by diffusion from the blood into the bowel lumen; and only about 9.5 per cent arises from the putrefactive activity of the intestinal tract. Obstructed bowel is shortened and its bursting strength is only about one-half normal. Wangenstein measured the intra-enteric pressure in actual cases of human intestinal obstruction and found it to be from four to 14 cm. of water in the small bowel, and from 12 to 52 cm. of water in the large bowel. The ileocecal valve accounts for the higher pressures in the colon, as gas can be forced from the small bowel into the colon but it usually cannot return. Thus colonic obstructions

virtually become closed loop obstructions, a circumstance which has an important clinical bearing.

Formerly the absorption of toxic products was thought to be an important factor; today this factor is regarded as negligible. The blood of animals in the terminal stage of intestinal obstruction is harmless for transfusion. Moreover, "Every available evidence points toward a diminution of mesenteric venous absorption with increased intra-enteric pressure." (Wangenstein). As long as the bowel is viable absorption does not occur. Sustained pressure in the bowel may, however, cause patches of necrosis in the wall. In animals a sustained pressure of 20 cm. of water over 28 to 32 hours will cause necrotic patches. Pressures of 40 cm. of water caused necrosis in 11 hours, and with a pressure of 100 mm. of mercury transperitoneal diffusion may occur in three hours.

Occlusion of the veins of the bowel brings about a considerable blood loss in the wall and into the lumen of the bowel. Experimentally if the veins alone of a segment of bowel three to four feet long are tied, enough blood may be lost in four or five hours to cause shock or even death.

Wangenstein calls attention to the foregoing considerations to emphasize that it is *mechanical* rather than the toxic factors which are of importance in the development of a serious situation in intestinal obstruction. The highly important physiologic considerations of intestinal obstruction are (1) loss of fluids by vomiting, (2) loss of blood in the lumen of the bowel, and (3) the loss of mineral salts (electrolytes).

A wide variety of pathologic conditions may bring about an intestinal obstruction. The commoner causes include congenital atresia, imperforate anus, benign and malignant tumors of the bowel, adhesions and

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adhesive bands, obturation of the bowel by gall-stones, feces, etc., external compression by tumors or abscesses, external hernia, internal hernia, volvulus, intussusception, Meckel's diverticulum, nervous imbalance of the bowel (either paralytic or spastic), and mesenteric thrombosis and embolism.

The *early diagnosis* of intestinal obstruction is of greatest importance in the successful treatment of this disease. The mortality increases rapidly with delay of diagnosis and the institution of proper treatment. Even a few hours may spell the difference between recovery and disaster. A few extra hours of high sustained intraluminal pressure may bring about necrosis of a patch of the bowel wall with an insuperable peritonitis. It is highly important that the physician's mind be alert to the recognition of the earliest symptoms and other diagnostic guides of intestinal obstruction. The first symptoms which indicate some type of intestinal obstruction are the important ones. Later symptoms or laboratory aids merely help in differentiating the etiology and type of the obstruction.

By far and away the most important single symptom of intestinal obstruction is *pain*. The pain is usually sudden in onset and has a cramp-like character. It is due to distention of the bowel in its usually futile efforts to force gas past the obstruction. Its intermittent, paroxysmal, recurrent nature is characteristic. The patient will often call attention to his awareness that the pain is beginning. It may then rise to such a crescendo of severity as to make the victim twist about in helpless agony. He will break out in a cold sweat and may even go into collapse. The attacks of pain come at variable intervals, as three to 15 minutes, and may be sustained for several minutes. Usually the pain is referred each time to the same location in the abdomen in contrast to the pain of an acute enteritis, which is usually variable. When the small intestine is involved the pain is usually at the umbilicus or just above; when the colon is the site of the obstruction the pain is in the hypogastric region or it may be well localized at the lesion itself. Intestinal colic may, of course, be

found in other afflictions than intestinal obstruction.

Vomiting is of next importance to pain as a symptom of intestinal obstruction. The higher the obstruction the more frequent and more copious is the vomiting. The greatest vomiting is in high jejunal obstructions. Lower in the alimentary tract vomiting becomes less of a feature and may be absent entirely in obstructions of the left colon. The first vomitus is gastric mucous, to which soon is added bile and enteric secretion. In advanced cases the vomitus may have actually a fecal character. The diagnosis of intestinal obstruction should be made long before the appearance of fecal vomiting.

A history of previous operation or operations is of great importance in suggesting the diagnosis of intestinal obstruction if intermittent pain and vomiting are also present. Probably the peritoneal cavity is never opened and closed without the formation of adhesions of the peritoneal surfaces. To a large extent the degree of these adhesions is dependent upon the gentleness of the surgeon and his technique of covering raw surfaces and of closing the peritoneum. In cases in which adhesions seem most prone to develop the writer feels that amniotic fluid² has a definite value in their prevention. Pelvic operations are a common cause of the formation of pernicious adhesions although appendectomies, being so common, are perhaps more frequent offenders. The "fiddle-string" type of adhesion is the most dangerous. Adhesions of this type may develop and be present for years before they may cause an incarceration of the bowel and resultant intestinal obstruction. It is to be remembered that adhesive bands and strings capable of causing intestinal obstruction may be present in the peritoneal cavity without a previous operation having been performed. A previous abdominal injury may be an etiological factor in some cases of peritoneal adhesions. Previous milder attacks of cramp-like periodic pain and vomiting suggest partial intestinal obstructions which recovered spontaneously. In cases of previous operation in which it can be learned that there was peritonitis, and particularly where drainage was

necessary, is the formation of adhesions to be suspected.

There are other points in the history which may have a bearing on the diagnosis of intestinal obstruction. Increasing constipation or complete absence of bowel movements suggests an obstructing lesion, usually a carcinoma, in the sigmoid flexure of the colon. Blood may have been observed in the stools in intussusception or in carcinoma. Marked loss of weight suggests malignancy in the region of the ileocecal obstruction. The patient may give a history of a previously readily reducible external hernia which may now be irreducible. History of gall-stones or jaundice may indicate the possibility of obstruction by obturation of a gall-stone. Patients who have been known to have suffered from vegetative endocarditis may be suspected of having a mesenteric thrombosis or embolism. New borns with vomiting or distention must be investigated for congenital atresia of the bowel or imperforate anus.

The physical examination often yields important evidence and must be carried out with great care. Of first importance in patients with periodic cramp-like pain and vomiting is the auscultation of the borborygmi of hyperperistalsis coincident with the acme of the pain. These are loud whirring, gurgling noises which are best heard with the stethoscope when the patient's pain is most severe. The character of these sounds changes with the progress of the disease, and they are finally silent in the advanced stages of the disease.

Distention of the abdomen may be entirely absent in any type of early obstruction. In high jejunal obstructions it may be unimportant in amount through the course of the disease, particularly if the stomach is kept empty by aspiration. As the usual obstruction becomes older the distention of the abdomen becomes increasingly evident until it may be very marked indeed. This is specially true in small bowel obstructions. In obstructions limited to the colon with a functioning ileocecal valve, the colon alone may be distended and the small bowel be virtually normal.

Palpation of the abdomen may give very valuable information. In simple obstruc-

tions where there is no compromise of the blood supply, tenderness and rigidity may be slight or absent unless the bowel is so distended that there is weeping from its surface. When the bowel is obstructed in such a manner that its blood supply is impaired and the bowel is strangulated, serosanguineous fluid is produced in the peritoneal cavity. This fluid causes or is accompanied by an irritation of the peritoneum. Irritation of the peritoneum in turn causes it to be sensitive; palpation is painful and rebound tenderness is readily elicited. Some rigidity may be present. The finding of rebound tenderness and sensitive peritoneum, then is of great importance, as it would indicate a strangulation of bowel demanding immediate operation, whereas the absence of rebound tenderness and sensitivity may authorize delay in surgical exploration. Often the surgeon may be in doubt as to the presence or absence of strangulation and then operation will have to be carried out.

Visible peristalsis may be present in chronic obstructions where the bowel wall has hypertrophied in response to long-standing back pressure. It is very uncommon in early intestinal obstruction. Percussion of distended abdomens will of course give a tympanitic note. In some cases, as intussusception, tumors at the ileocecal valve, volvulus, pelvic abscesses, etc., a mass may be palpated. There may be visible explanation of the obstruction, such as strangulated external hernia, an imperforate anus, etc. In advanced cases of intestinal obstruction the intra-luminal blood loss may be so great as to cause shock.

In all cases of suspected intestinal obstruction an X-ray examination should be made. The patient is placed prone or supine on the X-ray table and a film is made without contrast medium ("scout film," "flat plates"). Except under three years of age, gas is normally absent from the small bowel. Experimentally in dogs gas will appear in from three to three and one-half hours after the obstruction.³ The finding of gas in the colon and relatively little in the small bowel indicates a left colon obstruction with a functioning ileocecal valve. If there is gas in both large and small bowel the

obstruction is in the former. It is usually possible to identify the colon in the film as well as to differentiate between the jejunum and the ileum. The finding of a pneumoperitoneum with the film made in the lateral or vertical position indicates that gas has escaped from the bowel into the free peritoneal cavity. The vertical film in intestinal obstruction may show numerous fluid levels, but the horizontal films are most useful in diagnosis. In colonic and rectal obstructions a barium enema may be given, and often will give a very conclusive picture of the carcinoma. A safe working rule is never to give barium by mouth in any case of intestinal obstruction. Wagensteen has shown the value of a vertical film of an inverted new born baby in cases of imperforate anus. The bubble of gas in the infant's colon will seek the highest level and thus differentiate between an imperforate anus and a rectal atresia.

In early cases of intestinal obstruction the pulse, respiration, temperature, and blood-pressure are usually unchanged. In the more advanced cases dehydration may bring about an increase in the red blood count and hemoglobin. The leucocyte count has little significance in early cases, but is high in late cases. High obstructions which have existed for 48 hours show a decrease of the blood chlorides from the persistent vomiting. Increased combining power of the blood for carbon dioxide and elevation of the non-protein nitrogen are often found.

In intestinal obstruction enemas are generally useless and may be deceptive. *Bowel movements, either with or without enemas, may occur from the section of bowel below an acute complete intestinal obstruction.* When this section is emptied no further feces or gas will be passed, but the diagnosis should have been made before that time. Morphine may mask the symptoms and it is inadvisable to give it.

Once the diagnosis of intestinal obstruction seems fairly certain, an effort should be made to ascertain what particular type of obstruction is present. In new born infants having attacks of upper abdominal pain, nausea, and bile-stained vomitus congenital atresia of the duodenum may be suspected and may usually be confirm-

ed by X-ray examination. In new borns with imperforate anus there is vomiting and abdominal distention and the X-ray will distinguish between mere imperforate anus and atresia of the rectum.

In young infants pyloric stenosis will be accompanied by visible peristalsis of the stomach. Where there is intermittent pain, vomiting, blood-tinged mucus in the rectum or passed by rectum, and a palpable abdominal tumor, intussusception may be expected. In these cases rebound tenderness may be absent. A visible and palpable external hernia is a self-evident cause of obstruction.

In adults with laparotomy scars presenting the symptoms of intestinal obstruction the cause is usually bands of adhesions. Where there is distention and vomiting but pain is relatively inconspicuous the condition is usually a "paralytic" ileus. In adults without laparotomy scars and having symptoms of acute obstruction the cause may be incarcerated or strangulated external hernia, incarcerated internal hernia, intussusception, malignancy, adhesive bands, or obturation of the bowel due to gall-stones. In volvulus there may be a distinctly recognizable elastic distended coil of bowel in the region of the sigmoid flexure of the colon or at the cecum. In mesenteric thrombosis and embolism the symptoms of abdominal pain, vomiting, and occasionally diarrhoea are of slow development, often taking a week before the symptoms demand serious consideration. In obstructions of the colon, vomiting may be absent. Where the attacks of intestinal colic are chronic or repeatedly subacute and are accompanied by visible peristalsis, and loss of weight, acquired strictures are usually the cause. If there is blood in the stool these are generally carcinoma, and if blood is absent they are inflammatory.

Careful consideration of the variations of the general picture of intestinal obstruction will often give valuable indications as to the specific type of obstruction, its degree, and situation, and will furnish us with valuable guidance for therapy. It is valuable to remember, as stated by Orr⁶, that "the nearer the obstruction is to the pylorus, the more rapidly symptoms will develop and the more promptly death will

ensue if the obstruction is not relieved." Sometimes the clinical problem is difficult indeed. One of the most difficult is, as Wangensteen says, the differential diagnosis between a strangulated obstruction and an inflammatory lesion complicated by a simple obstruction.

TREATMENT OF INTESTINAL OBSTRUCTION

All well developed cases of intestinal obstruction are dehydrated and will demand replacement of fluid before operation. For this purpose para-oral administration of saline solution is indicated and should be given in sufficient quantity to produce a daily urinary output of 700 to 1500 c.c. In high jejunal obstructions saline solution acts like a specific in the relief of symptoms. In all cases of strangulation of the bowel where a considerable loss of blood in the bowel is pre-supposed, blood transfusions are strongly indicated. Fluid replacement and blood transfusions are of prime importance in the preliminary treatment of intestinal obstruction.

Of parallel importance with fluid replacement and blood transfusions is the relief of the gaseous distention in the bowel. Of recent years Wangensteen has done a great service by emphasizing the value in the treatment of intestinal obstruction of suction applied to an indwelling duodenal tube. Wangensteen⁴ has shown that this method may be a satisfactory substitute for operation, particularly in adhesive incomplete occlusions, and in physiologic obstructions. He says "As an auxiliary to surgery, it has proved of value in most obstructions. Its limitations are quite understandable and the employment of suction applied to an in-laying duodenal tube *as the sole remedial agent is strictly contraindicated essentially in two kinds of obstructions (1) strangulation obstructions, (2) occlusion of the left colon in which the competent proximal ileocolic sphincter limits the distention to the colon.*"⁶ When indicated and properly employed this method has inestimable value. The surgeon should be watchful, however, for chloride depletion in prolonged use of the Wangensteen suction apparatus. The essentials of the apparatus are a long catheter, which is passed through the anterior nares, down the oesophagus and into the stomach, and a

system of bottles and tubes so arranged as to produce syphon suction of about two and one-half feet of water pressure, and also a trap in a bottle where can be measured all gas aspirated from the stomach or duodenum. The passage of the tube is facilitated by having the patient drink water as the catheter is passed. In some cases suction from the stomach seems to be ample, but where suction from the duodenum is desired a lead tipped catheter is used and the patient lies on his right side and drinks water into an empty stomach. The catheter generally finds its way into the duodenum, where its presence can be proved by X-ray. If it fails to enter the duodenum promptly inhalation of amyl nitrate may encourage its entry. When the catheter tip is in the stomach the patient is permitted to drink water as desired for it is immediately sucked out. This process carried on for several days may lead to a real lowering of the blood chlorides, with danger to the patient.

Patients with intestinal obstruction may conveniently be divided into three classes. The first class, which is a very small group, consists of those on whom an immediate operation is indicated. These patients are in excellent condition and the obstruction will have been recognized within a few hours after its inception. "The only real danger is from deciding that nothing serious is wrong." Morton⁷. In the second class despite the fact that immediate relief of strangulated bowel is demanded, yet the patient's general condition is so poor that supportive measures outweigh the need of immediate operation. These patients have a dry skin and tongue, anxious faces, periods of restlessness, general discomfort, and slightly fecal odor to the vomitus. The non-protein nitrogen will be high and there will be a leucocytosis, and abdominal distention is present, but the pulse and temperature may be normal. A few hours of para-oral saline and dextrose, blood transfusion, Wangensteen suction, and morphine will enable the patient to withstand the necessary surgical procedures with much greater safety. In the third class of patients it may be possible to defer operation indefinitely or even omit it. These are the cases

of "paralytic ileus" in peritonitis and many cases of obstruction by adhesive bands *where there is no strangulation*. It should be emphasized that it may be impossible to exclude the presence of strangulation even in the absence of sensitive peritoneum and rebound tenderness and in that event the surgeon will be obliged to explore the abdomen. Also in this class may be included moribund cases in which operation can not possibly be of benefit.

The choice of anesthesia in operations for intestinal obstruction is of importance. Spinal anesthesia is warmly recommended by many surgeons, but the writer feels that its use is relatively restricted and is definitely contra-indicated in advanced cases. Enterostomy may be done under local anesthesia but general anesthesia is preferable. For general utility ethylene, ether, and cyclopropane are advisable.

The actual surgical procedures will depend on the age and type of obstruction and upon the patient's general condition. In the early case release of the bowel will be all that is necessary. It is usually preferable, in searching for the obstruction, to begin with the collapsed bowel and trace it upward. This may readily be done by cutting the obstructing band or hernial ring. The incarcerated bowel will be carefully observed for 15 to 20 minutes for viability and return of function. During the observation warm moist compresses are applied to it. If the color markedly improves, its peristalsis on stimulation returns, if the serosa is smooth and glistening, and pulsation of the vessels returns, then it will be usually safe to return the bowel to the abdomen. If the distention of the small bowel is not marked enterostomy will be omitted. The presence in the peritoneal cavity of bloody serous effusion indicates a serious strangulation. In some of these strangulations bowel function will recover after as long as ten hours, in others it will fail to recover after as little as three hours.

As Morton⁷ points out, gangrenous patches can be merely inverted without resection. Where the bowel is irreparably damaged removal of the damaged segment will be necessary. It is advisable to go well beyond the involved area to escape small thromboses in the adjacent vessels. In the

small bowel resection and anastomosis is usually carried out, although in desperate cases the exteriorization operation of Mikulicz will be safer. A lateral anastomosis is less likely to result in stenosis of the bowel, but the end-to-end type, especially where done with a Rankin clamp, is quicker and usually satisfactory. The Mikulicz operation is less suited to the small bowel than the large because of the more irritating character of the enteric discharge in the former. In the large exteriorization is distinctly preferable to anastomosis, which carries much more hazard. In all exteriorization operations the bowel is brought outside the abdomen, sectioning some of the mesentery when necessary, and the peritoneum closed around the two ends. The affected bowel may then be removed. The proximal end may be made to extend three or four inches and sewed over a Paul's tube to give immediate decompression if that be urgent. It is preferable to leave the clamps on the bowel six to 48 hours before opening the proximal clamp. In extremely ill patients it may merely be possible to make a side-tracking anastomosis around the necrotic bowel without removing it. This has been practiced successfully by Montgomery in irreducible intussusceptions.

In operation on strangulated external hernias, unless care is taken to prevent it, the release of the bowel may permit it to slip back into the peritoneal cavity before the surgeon has had an opportunity to satisfy himself as to its viability. This is unfortunate and should be prevented if possible because in this situation the surgeon will be obliged to do a laparotomy to examine the affected bowel.

The indications for enterostomy may be difficult indeed to determine. Unless an enterostomy is performed under meticulously aseptic conditions a disastrous peritonitis may result. Where there is tremendous distention enterostomy is futile because the wall of the bowel opposite to the enterostomy tube will approximate to the latter so strongly as to preclude the passage of gas or fluids through the tube. Enterostomy is practically useless in so-called paralytic ileus. There must be peristalsis in a bowel to make an enterostomy function. In early cases where the obstruc-

tion is released and the motility of the bowel is satisfactory an enterostomy is unnecessary and may be positively harmful. Suction within dwelling catheter may be entirely adequate in the post-operative management of such cases. None the less it is perfectly certain that a properly performed enterostomy has saved many lives under the proper indications. In very ill patients in whom it is poor surgical judgment to make an extended search for the obstruction merely doing an enterostomy (except, perhaps, in cases of marked strangulation) may tide the patient over the crisis until more favorable conditions for further operation are present. Moreover, in some cases of obstruction due to freshly formed post-operative adhesions enterostomy may be all that is necessary and the obstruction will clear up with decompression of the bowel. Where an anastomosis has been necessary and there is marked distension a proximal enterostomy will protect the suture line. The writer prefers the Hendon (mushroom catheter) type of enterostomy to the Witzel type. Stripping of the bowel to remove its contents is always unwise⁸.

Trauma should be minimized and raw areas carefully covered as a prophylaxis against adhesion formation. Where it has been absolutely necessary to separate adhesions it is definitely valuable to place 100 c.c. to 200 c.c. of amniotic fluid concentrate² in the peritoneal cavity before closing.

The post-operative care is of extreme importance after operations for intestinal obstruction. In immediate shock the head will be lowered but the patient will be raised to a semi-sitting position as soon as possible. The Wangenstein suction apparatus will be used at once in all cases and when the patient is conscious he is permitted to drink, keeping a careful watch against chloride depletion. Fluids are given by vein, under the skin, and by rectum in such quantity, usually 3,000 to 4,000 c.c. per day, so as to produce a urinary output of 1,000 to 1,500 c.c. per day. One liter of physiologic saline should be sufficient for the chloride requirements and the balance should be 5 per cent dextrose in distilled water. The blood chloride should be carefully watched. Where the

blood chloride determination shows a hypochloremia more sodium chloride is given intravenously in concentrations of 2.5 to 5 per cent until this condition is corrected. If the blood chloride is too high saline should be omitted. Interrupted intravenous injections are preferable to a continuous venoclysis. In strangulation obstructions blood transfusions are particularly indicated.

Efficient external application of heat to the abdomen is comforting and probably increases peristalsis. Drugs purported to stimulate the intestine have little of any value. Morphine is valuable and should be used freely. As Orr⁶ points out, oxygen is too little use in the serious case of intestinal obstruction. It should be employed by tent or nasal catheter. Enemas have little value in the post-operative care except to clear the rectum and lower colon. Where an enterostomy has been done it is sometimes advisable to connect the enterostomy tube to the Wangenstein suction apparatus. When normal bowel movements are resumed an enterostomy, if present, is discontinued. The tube may first be clamped and if there are no ill effects the tube is removed or the exposed tip is cut off and allowed to pass down the bowel.

SUMMARY

A knowledge of the pathologic physiology of obstructed bowel is necessary for the understanding of intestinal obstruction. The earliest symptoms are the most important in the recognition of the disease, as the earliest cases are the most successfully treated. Extremely ill patients should not be operated upon until they have been properly prepared. The actual surgery of intestinal obstruction requires the highest judgment, skill and adaptability. The after-treatment is of vital importance to the successful outcome of the management of intestinal obstruction.

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Experience With the Use of Protamine Insulin*

A Preliminary Report

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In January, 1936, Hagedorn and his co-workers¹ published a summary of their clinical results with the use of protamine insulin developed by them over two years previously. At the same time, Joslin's group² published preliminary observations on fifteen patients. Their experiences after a few months led Joslin to designate as the Hagedorn era a new period of improvement in diabetic therapy.³

During the Banting era, various modifications to prolong the action of insulin were attempted without being of practical clinical value. Hagedorn found that the addition to insulin of protamine derived from the sperm of a certain species of trout formed a compound which at a pH reaction close to that of blood serum was slowly broken down and absorbed over a period of hours greater than that of unmodified insulin. During the past two years, clinical investigations with protamine insulin have been carried on in many diabetic clinics throughout this country. The original claim of its prolonged action has been substantiated. Addition of small amounts of soluble salts of calcium and zinc were found to improve the physical characteristics and stability of the preparation as well as to prolong the action even into the second and third day after injection.^{4, 5} Protamine zinc insulin proved to be the most efficient combination and after many months of clinical trial was made commercially available the forepart of this year.

In June, 1936, we began, at the University Hospital, a three months period of intense investigation of the clinical use of

protamine insulin.[†] Unmodified protamine, calcium protamine and zinc protamine insulins were used. In our experience as well as that of others the protamine zinc insulin was superior in its action.^{††} Since the close of the three months period, during which 19 patients were carefully studied, additions to the series have been made from the hospitals, out-patient department and my office, bringing the total number to 65. Experience with this group forms the basis for this paper. A more detailed report to be published at a later date is being prepared.

Regulation of the diabetic patient on protamine insulin should not be undertaken unless the physician realizes that definite dietetic management is still an essential in treatment and that the use of regular insulin has not been abandoned. Reasonable cooperation from the patient is an important factor and unless this can be obtained improved control of the disease with protamine insulin need not be expected.

Under the best of circumstances a very small group of cases may be controlled with difficulty and in some instances seemingly better controlled with the use of regular insulin. In about 15 per cent of our series, control as measured by glycosuria not exceeding ten grams in 24 hours and improvement in the fluctuations of blood sugar was difficult to obtain but neither was it obtained with the use of regular insulin alone. We have found with one exception that the patients in this group are under 35 years of age. Increasing experience has shown that seemingly minor changes in their diet and dosage of insulin may result in improvement. Twenty per cent of our patients take from five to twenty-five units of regular insulin in addition to their protamine insulin. Joslin's statistics⁶ indicate that in from

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† This investigation with the technical assistance of Fay Shepard and Earl Mulmed was made possible through the Research Fund of the University of Oklahoma Medical School. The Protamine insulin was furnished through the courtesy of the Eli Lilly Laboratories.

†† In the following discussion, unless especially designated, protamine insulin refers to that containing zinc.

sixty-five to seventy per cent of the diabetics, the onset of the disease is in the fifth decade or later. It is in this group, subject to the unfortunate complications of older diabetics, that improved regulation with protamine insulin has been obtained with the least difficulty and almost invariably without the use of unmodified insulin. McBryde has demonstrated that in diabetic management, the younger patients are relatively insulin sensitive and the older ones are relatively insulin resistant. We have found it of value to classify our patients on this basis. Those who are severely insulin sensitive invariably require regular insulin in addition to the protamine insulin to maintain reasonable control. Those who are moderately insulin sensitive may be controlled with protamine insulin but are more likely to show fluctuations in the blood sugar level and to show varying amounts of glycosuria. The insulin resistant group into which a majority of the older diabetics fall may be readily controlled by protamine insulin and less frequently develop hypoglycemia or show glycosuria.

Must the patient be hospitalized for regulation with protamine insulin? Sixteen patients in our group have been regulated without hospitalization. They were selected on the basis of cooperation with dietary instructions, willingness to make four-period urinalysis for sugar in 24 hours and to remain under close observation until regulated. An occasional blood sugar, preferably fasting, and frequent 24-hour quantitative urinalysis for sugar should be made. We now feel that the majority of those who are relatively insulin resistant can be easily regulated in the office or out-patient clinic if such cooperation exists.

In accordance with the suggestion given in early reports,⁸ most of our patients have received all of the protamine insulin in one dose before breakfast. It is only in the very occasional patient that a different time of administration seems preferable. If regular insulin is indicated it is also given before breakfast but in a different location. Care must be taken that instructions to the patients be sufficiently detailed to insure proper cleaning of the syringe and uniform suspension of the protamine

insulin at the moment of administration. A number of patients have complained of slight soreness, redness and occasionally lumps at the site of injection. These usually disappear in a short time but may last from 12 to 24 hours. None of our patients have shown insulin sensitivity of any appreciable degree. In some, relief from the mild discomfort has been obtained by transferring the site of injection from the thigh to the subcutaneous tissue of the arm or abdomen. At present, there appears to be no satisfactory method of accurately estimating the dosage necessary for the individual patient. If good control has been obtained with unmodified insulin, the amount of protamine insulin required is usually less. If this has not been the case, the required dosage may be greater. The average of the total decrease in units was about 25 per cent in our group. Small doses of regular insulin each morning for a few days will decrease the glycosuria incident with the transfer to protamine insulin. It is important that too frequent changes in insulin be avoided since its efficiency may not be established for three days or more.

The use of longer acting insulin by no means insures control of the diabetes in a patient on a hap-hazard dietary management. If such a patient will not reasonably follow a definite regime, one should hesitate to advise the use of the longer acting insulin. Our diets have averaged 175 Gms. of Carbohydrate, 74 Gms. of Protein and 92 Gms. of fat. The Carbohydrate has varied from 100 to 250 Gms. As a rule, it has been partitioned between the three meals in the ratio of 1/5, 2/5, 2/5 according to the suggestion of Sprague.⁸ After short experience, it became a rule to give a bedtime lunch of foods from which carbohydrate is slowly liberated, such as milk, bread, meat or cheese. In many patients, especially of the insulin sensitive group, individual rearrangements of the diet have aided in establishing control.

Although insulin reactions occur more frequently with the use of regular insulin, their occurrence with the use of protamine insulin is sufficiently frequent to deserve special emphasis. In the detailed study of 19 patients during which four daily blood sugars were made for many consecutive days on each patient, approximately five

per cent of the readings were below 70 mgm. per cent after instituting the use of protamine insulin. Most of the low-readings were on the fasting blood specimens. The majority of the patients in this entire series have had reactions at some time since transferring to protamine insulin. They occur most frequently late in the afternoon or before breakfast the following morning. Since the onset is slower, the symptoms are less abrupt and with many patients less easily recognized. Headache, nausea and an unpleasant disposition are common symptoms, which are rarely found in hypoglycemia produced by regular insulin. Also there may be drowsiness, restlessness, paresthesia of the extremities, sweating and hunger. Four of our patients have had reactions of such severity as to produce unconsciousness. Two of them were diabetics of years standing who had experienced hypoglycemia numerous times under management with regular insulin but after having been placed on protamine therapy failed to recognize the symptoms even though the difference had been explained previously.

Exercise as a factor contributing to hypoglycemic reactions is important and according to some of the patients seems more likely to precipitate a reaction than when they were using regular insulin. In the insulin resistant group in which the incidence of reactions is lower, exercise was almost invariably the precipitating cause. Reactions may best be prevented by establishment of a bedtime feeding, insisting upon extra carbohydrate before or after unusual exercise and avoidance of overdosage in an attempt to control daytime glycosuria which might better be done by alteration of diet or administration of small amounts of regular insulin.

CONCLUSIONS

1. In the majority of the 65 patients with whom we have used the protamine insulin alone or in conjunction with regular insulin, the diabetic control as measured by glycosuria and fluctuations in the blood sugar level has been definitely improved.

2. Almost without exception the patients have an improved sense of well-being.

3. The use of protamine insulin is much more convenient from the standpoint of the patient's management of his disease.

4. Insulin reactions are not infrequent and are sufficiently severe to warrant special measures in an effort to prevent them.

5. At the present time the use of protamine insulin does not entirely supplant the use of regular insulin in all diabetics.

6. It has been found to be of practical value from the standpoint of protamine insulin therapy to classify patients as severely insulin sensitive, moderately insulin sensitive and relatively insulin resistant.

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"Stone Walls Do Not a Prison Make Nor Iron Bars a Cage."

Winter is a jailer who shuts us all in from the fullest vitamin D value of sunlight. The baby becomes virtually a prisoner, in several senses: First of all, meteorologic observations prove that winter sunshine in most sections of the country averages ten to 50 per cent less than summer sunshine. Secondly, the quality of the available sunshine is inferior due to the shorter distance of the sun from the earth altering the angle of the sun's rays. Again, the hour of the day has an important bearing: At 8:30 a. m. there is an average loss of over ten per cent, and at 3:30 p. m., over 21 per cent.

Furthermore, at this season, the mother is likely to bundle her baby to keep it warm, shutting out the sun from Baby's skin; and in turning the carriage away from the wind, she may also turn the child's face away from the sun.

Moreover, as Dr. Alfred F. Hess has pointed out, "It has never been determined whether the skin of individuals varies in its content of ergosterol" (synthesized by the sun's rays into vitamin D) "or, again, whether this factor is equally distributed throughout the surface of the body."

While neither Mead's Oleum Percomorphum nor Mead's Cod Liver Oil Fortified With Percomorph Liver Oil constitutes a substitute for sunshine, they do offer an effective, controllable supplement especially important because the only natural food-stuff that contains appreciable quantities of vitamin D is egg-yolk. Unlike winter sunshine, the vitamin D value of Mead's anti-ricketic products does not vary from day to day or from hour to hour.

Diabetes and Heart Disease*

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To the physicians who are interested in internal medicine there are several important problems that frequently arise in connection with heart disease and diabetes. I will first enumerate these problems, and shall then briefly discuss each one separately.

First. Since diabetes is one of the most frequent associations of arteriosclerosis, does it have any effect on the production of any types of heart disease? If so, what are these types?

Second. Are there any methods of treatment of diabetic cases that will prevent arteriosclerotic changes, and the resultant heart changes?

Third. In the two diseases, each complicating the other, in a general way what should be our treatment, and in what conditions are diabetic treatments dangerous to the patient?

Fourth. Are there any points of similarity in the diagnosis of these two separate diseases that might cause confusion in their differentiation?

Fifth. From the experience gained from our former treatments of diabetes may we deductively assume protamine insulin to have any better effect on arteriosclerotic heart conditions?

Heart disease in diabetes is largely limited in the heart to arteriosclerotic changes and to hypertension. Death seems to occur in these cases most often from coronary occlusion. Rheumatic fever and syphilis seem to be minor factors in the development of cardiovascular disease in diabetics. It is well known that diabetes and the arteriosclerotic symptoms of heart disease occur most frequently at the same age of life—between fifty and sixty years. A large number of diabetics, especially the mild cases occurring in elderly individuals, develop coronary artery disease and

hypertension. This has become more evident now that insulin products prevent early death, and allow the diabetic patient to live long enough for him to develop vascular changes. In other words, there is uncertainty at the present time that diabetes is the cause of angina; for the patients dying from angina pectoris are practically the same age as those with diabetes who die from angina pectoris. It is thought however, that mild diabetic patients who have been kept on diet alone without the use of insulin and have developed arteriosclerosis, are prone to develop anginal symptoms. Friedman in 1935, in a series of 120 cases of diabetes above the age of 39, found that arteriosclerosis was demonstrable in the aorta in 75 per cent; and that 60 per cent of these had aortic dilatation. Also, the heart was enlarged in 47 per cent. Hypertension was present in 56 per cent. Rabinowitch in the same year found, in a series of 500 diabetics, that 62 per cent had cardiovascular disease.

Degeneration of the heart muscle itself, apart from coronary disease, has been noted by several observers. At autopsies of cases dying in diabetic coma, it has been noted that the heart muscle is pale, cloudy, and swollen. Consequently, the deduction from these reports leads one to believe that arteriosclerotic changes have frequently been caused by diabetes, and these changes insofar as the heart is concerned are hypertensive heart disease, coronary disease, and toxic myocarditis.

The non-diabetic can take protein, fat, and carbohydrate without much apparent damage to his body; but in the diabetic it is felt that protein favors rather than prevents the onset of arteriosclerosis. Consequently, the usual diet rarely exceeds one gram of protein per kilo of body weight. Carbohydrate in a diabetic, if used in such excess as to cause an obesity, may be a

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factor in the development of arteriosclerosis. Excess of fat and cholesterol most certainly seems to favor this condition, and an acidosis over a period of time is also classed as a factor. From the experiences of various investigators, especially with diabetic children, conclusions are rather general that excess cholesterol in the blood seems to be a very important causative factor in the production and development of arteriosclerotic changes. Cecil states that after the third decade of life we see arteriosclerosis with increasing frequency in our diabetics, and that in the middle aged and elderly it is found with great uniformity. The arterial disease however, is often most marked in the mildest cases and many times absent or negligible in the severe forms. Dr. Joslin has pointed out that the uncontrolled diabetic has high blood cholesterol; and that the controlled diabetic runs a more nearly normal one. He has also demonstrated that a higher carbohydrate, low fat diet, in contradistinction to our former high fat diet, shows less arteriosclerosis in our diabetics. In 1935, Rabinowitch reported from investigation and data obtained from other observers, that high carbohydrate low caloric diets have delayed the development of cardiovascular disease, and that one of the most constant characteristics of such a diet is an immediate and sustained decrease in the plasma cholesterol. If this be true, it would seem that arteriosclerosis, which includes hypertensive heart disease and coronary heart disease, can to some extent at least be prevented by the proper regime to prevent the high cholesterol in the blood; and to prevent this high cholesterol, our treatment should be a fairly high carbohydrate, low fat, and fairly low caloric diet, which is controlled by sufficient insulin products to keep the blood cholesterol as near a normal state as possible in that patient.

The indications and limitations for the use of the various drugs used in cardiac cases are the same in diabetic patients as in non-diabetic patients. However, there are certain types of heart disease in which caution must be exercised in the treatment of diabetes. Primary among these are coronary thrombosis and angina pectoris.

It has been shown by numerous observers that insulin can be harmful to patients with these types of heart affections, and that hypoglycemia is to be avoided in these cases. There is much in the literature showing varied reports, from the precipitation of anginal attacks in diabetic patients with damaged myocardiums, to actual deaths. This is thought to be due to the action of insulin. The results obtained from insulin shock are the same as those obtained from a low carbohydrate diet without the use of insulin. Not only may the cardiac diabetic not be helped by too rigorous control of his diabetes, but also he may be made worse by too much sustained lowered blood sugar, or insulin shock. It seems probable that the pathological heart requires more carbohydrate than the normal heart; and the bad effect of insulin is not due to insulin itself but to the lessened carbohydrate it causes to the heart muscle. Consequently, a higher than normal blood sugar level is beneficial to our acute cardiac patients rather than harmful. In these heart conditions insulin and protamine insulin should be used with caution, and in small doses repeated often if necessary. In the elderly diabetic sudden or radical reductions in the carbohydrate is extremely dangerous, and should not be done. Muscular exercise of the cardiovascular patient with diabetes should be encouraged according to the condition of the heart musculature.

In the discussion of question four, there is one particular heart condition which may simulate clinically impending diabetic coma. That condition is coronary thrombosis in a diabetic patient. Since coronary thrombosis occurs quite frequently in these patients, of course glycosuria is common. If infarction occurs, the blood sugar may rise to a very high level, diacetic acid and acetone may show in the urine, and a condition resembling diabetic stupor or coma may develop. When this occurs, we are likely to feel that this is a true diabetic coma development; but it may be the result of an associated coronary thrombosis. Care must be used in the differentiation as to the cause of the hyperglycemia,—and a thrombosis of the heart must not be overlooked. Insulin

if used in too great doses might be very serious to our patient.

The work done by Dr. Joslin and his associates with protamine during the last year seems to show that the blood cholesterol is rarely high with its use in the control of diabetes. This was not true of regular insulin. In many patients they had great difficulty in keeping the blood cholesterol at a normal level. The characteristic pathological point of differentiation of arteriosclerosis due to diabetes and that due to other causes, is that in the diabetic the same type of changes are found in the smaller arterioles that are found in the larger arteries. We wonder with our lower level of cholesterol in the blood obtained with the use of protamine insulin, if we may expect less arteriosclerosis and consequently less heart complications in later years than has been seen formerly in our diabetics. It will be difficult to state definitely for several years at least, that protamine will prevent heart complications in our diabetics; but in the light of former observations as to the possible cause of these complications, we are expecting it to make them less prevalent. It is perfectly possible that the high cholesterol con-

tent of our former diets, and the inability to control the cholesterol in the blood, was responsible for the cardiovascular complications seen in diabetes.

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Anemia in General Practice*

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In picking the subject of "Anemia in General Practice," I am especially concerned with the more mild types of this condition, which in big charity hospitals might be overlooked or ignored since they are not of such severity that they might be called dangerous, but at the same time have a great effect upon the wellbeing of the patient. It is of extremely common occurrence, being one of the most, if not the most, common of all conditions seen, which is important from an economic as well as a health standpoint. In my experience, as

is true with probably most of you, the greatest majority of these cases are ambulatory and present themselves often with symptoms which they themselves do not connect with the likelihood of anemia. The individual who treats this condition in a "shot gun" manner as is common and very easy to do with the large number of combined proprietary preparations on the market, is overlooking a very remunerative field in medicine and at the same time doing the patient harm.

The person who has an exact classification for anemia, either in regard to diagnosis or treatment, will eventually

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come to grief because of the great individuality of these cases. However, for a basis upon which to work, I present here two classifications, one by "Strauss" in the J.A.M.A., November 14, 1936, another by "Wintrobe," which is a more recent type classification. Many others, such as that by "Haden," may be used. However, the most important thing to my mind is

that anemia be treated intelligently, the thing which has not been done to any great extreme in the past.

CLASSIFICATION OF ANEMIA

1. Anemia due to acute loss of blood.
2. Anemia due to increased blood destruction.

(a) Extrinsic causes: Chemicals; in-

TABLE NO. 6. CLASSIFICATION OF ANEMIA

Corpuscular Volume Cubic Microns	Corpuscular Hemoglobin Concentration Per Cent.	Cause	Clyrical Syndrome	Treatment
1. Macrocytic—94	30	a. Deficiency of Castle's Anti-Anemia principle.	(1) Pernicious Anemia (2) Pernicious Anemia of pregnancy (3) Rare cases of, (a) Carcinoma of the stomach and intestines (b) Total Gastrectomy (c) Pellagra (4) Tropical Anemia of Wills. (5) Sprue (6) Macrocytic Anemia of Celiac diseases (7) Macrocytic Anemia of liver diseases.	Liver or Liver Extract, or extrinsic factor if this alone is deficient.
		b. Intense activity of bone marrow.	Conditions usually associated with normocytic Anemia (section 11)	Transfusions and treatment of cause.
2. Normocytic—80 to 90	30	a. Sudden loss of blood.	Acute posthemorrhagic anemia	Transfusion treatment of cause.
		b. Acute destruction of blood	e. g. hemolytic anemia, caused by Malaria.	
		c. Lack of formation of blood.	(1) Aplastic Anemia (Idiopathic and secondary) (2) Conditions which decrease amounts of functioning bone marrow, e. g. Leukemia, neoplasma. (3) Chronic Inflammatory and noninflammatory diseases "Physiologic" anemia of pregnancy.	Attempts to STIMULATE the blood formation.
3. Simple Microcytic 80 — to — 30		d. Hydremia "Imperfect formation of blood."	Subacute and chronic inflammatory diseases, and chronic non-inflammatory conditions	Transfusions and treatment of cause.
4 Hypochronic Microcytic—80	30	Deficiency of Iron through loss of blood.	(Chronic Posthemorrhagic anemia) Hookworm Anemia	Iron in large doses. Correction of cause.
		b. Defective diet.	(Diet deficient in food containing Iron) (Chlorosis Idiopathic Hypochromic anemia following total Gastrectomy (some cases) Sprue (some cases) Idiopathic Steatorrhea (some cases)	
		c. Defective absorption.	Hypochromic Anemia of pregnancy.	
		d. Excessive demand for Iron.	Repeated pregnancies	

fections, such as malaria and hemolytic streptococcic.

- (b) Intrinsic causes: As hemolytic jaundice, sickle cell, and paroxysmal hemoglobinuria.
3. Anemia due to decreased blood formation from nutritional deficiencies.
 - (a) Pernicious and related macrocytic anemias (sprue, pregnancy, pellagra, and gastro-intestinal disturbances).
 - (b) Hypochromic anemias of all types (including that due to chronic loss of blood).
 - (c) Anemia due to deficiency of Vitamin C.
 - (d) Anemia due to deficiency of thyroid secretions.
4. Anemia due to decreased blood formation from disturbances of blood forming organs.
 - (a) Toxic benzene, nitrogen retention, chronic sepsis, and the like.
 - (b) Physical radiation.
 - (c) Mechanical: Metastatic carcinoma of the bone marrow, Hodgkins disease, leukemia and other conditions.
 - (d) Idiopathic disturbances of the blood forming organs: "Aplastic," Cooley's, Splenic, Hepatic, and congenital Anemias.

I believe that for routine use the corpuscular volume or the corpuscular hemoglobin concentration, although very nice to have, is not necessary, if the physician himself will examine the blood smears on questionable or border line cases, since it is easy to get a very definite picture of both the size of the cells and the hemoglobin contents. It is common experience that the degree of anemia often has no relation to ideas formed from clinical findings, as illustrated very clearly in one case of a man with a macrocytic anemia, seen in January of this year, who presented a hemoglobin of 90 per cent, and a red cell count of 1,590,000, and in whom a diagnosis of pernicious anemia was finally made. His only subjective complaint at this time was the presence of mild abdominal cramps and a diarrhea of about two months standing, he was ambulatory and

had been doing heavy labor up until the time he was examined. He was put on liver extract, 3cc, every other day along with the general treatment of anemia, and following the third injection his red cell count had risen to 3,970,000, and his sense of wellbeing was much improved so that he could appreciate by comparison that he had been unwell for some months previous to his examination. His case also serves to illustrate two other points, one that the degree and rapidity of response varies remarkably in different individuals and also that the degree of anemia does not necessarily coincide with the subjective feelings of the individual.

Another peculiar thing which is of interest in regard to the treatment of anemias, is the fact that the type of anemia may change, as in one of my prenatales, who at five months had a low grade hypo-chronic microcytic type of anemia, with a hemoglobin of 70 per cent and a red cell count of 4,080,000. She was put on an iron preparation. No red cell count was obtained until two months later. She had a finding of a mild macrocytic anemia, with a hemoglobin of 90 per cent, and a red cell count of 3,960,000.

The most common types of anemia seen by the average practitioner are, First: Anemia of pregnancy, most always the hypochronic microcytic type. Second: Anemia associated with sepsis, dental sepsis and endocervicitis, being in my experience the most common causes. Third: Those due to dietary deficiencies, which have become increasingly common since 1929. Fourth: Anemia of infancy, which is usually a dietary deficiency, but this condition must be put in a class by itself. This, of course, does not include all the anemias seen.

The Microcytic types of anemia usually present the greatest problems. In these the average volume of red cells are usually 90 cubic microns. The definite cause is not known, but it is thought they are related somewhat by the underlying pathology. But it is known that they have a deficiency in anti-anemic substance, as discovered by Castle (who has done more to advance our knowledge of this group than probably any other man). It is thought that this substance is formed in

the stomach and stored in the liver, and regardless of whether this is true or not, it is of value to use as a presumption.

The treatment of anemias may possibly be divided into three divisions, namely: Prevention, which is, of course, the ideal way when possible. Second: The general treatment of anemia, and Third: Treatment by specific remedies. The field of prevention is rapidly becoming more extensive and is of especial value in anemia of pregnancy, and in anemia of infancy in those due to diet deficiency as well as those due to hemorrhage. In prevention of anemia of pregnancy it is of value to do blood counts at repeated intervals (three or four weeks) though some say that this is nonessential, a fact which I do not believe to be true, and some authors believe that the routine use of calcium or cod liver oil, or both, is of value in preventing anemia in pregnancy, another fact which, according to my experience, I cannot agree with, although they are useful for other reasons. It is recommended by some that the routine use of Iron, especially in the latter three months of pregnancy, is to be recommended. This is true in some areas because the percentage of anemia in pregnancy runs as high as 60 per cent. I prefer repeated blood counts, because of the fact that our percentage seems to be much lower than the above figure. Of course, this does not apply to the microcytic anemia of pregnancy.

The prevention of anemia in infancy is another subject which is open for much discussion. In our part of the country it is especially common, due to prolonged breast feeding without additional feeding. It apparently has been increasing, probably due to the economic distress brought on by the drought.

The prevention would, of course, involve the use of a well balanced diet, and the early use of egg yolk, certain cereals, vegetables and other substances that have a high value of iron contents, and occasionally the addition of some iron preparation. Dietary deficiency in general has been an ever increasing cause, especially in the last few difficult years, and should need no explanation. However, it is by no means limited to the economically unfortunate persons.

Focal infection is a definite cause, although usually the associated anemia is mild, unless, of course, there should develop a more severe generalized infection, or a super-imposed gastro-intestinal disturbance, which is not at all uncommon. The most common focal infection as the cause in my experience has been dental sepsis, cholecystitis and endocervicitis, the latter usually being more mild.

Anemia from sinus diseases and prostatic diseases are comparatively uncommon or perhaps I have overlooked many cases from these causes. Of course, the preventive treatment of anemia due to these causes is the removal of them, since they very often precede the anemia by many months. The general treatment includes such things as, bed rest, high caloric and high protein diets, avoidance and removal of the infections, transfusions, etc. Bed rest should be recommended to any person wherein any severe type of anemia is found, even mild cases where response to treatment is not satisfactory, and in mild cases some rest during the day will enhance the speed of recovery. When there is evidence of an infection it should be removed; however, with much more caution than usual, since the resistance of an anemic patient is much lower. Removal applies to Hookworm Anemia and Malaria as well as the focal and many other infections.

Transfusions are useful in the anemias due to acute hemorrhage and many other conditions in which the cause may not be known, or if there is no specific treatment, such as carcinoma, leukemia, aplastic anemia, etc. They may also be used to a great advantage in severe anemia even where specific treatment is used or where response is slow. In the specific treatment of the macrocytic type of anemia, the intrinsic factor as supplied by liver or ventriculin is of value particularly in pernicious anemia or pernicious anemia of pregnancy, and temporarily so wherein either the formation of the intrinsic factor in the stomach or its storage in the liver is interfered with as in carcinoma, cirrhosis, etc. In pellagra and sprue the intrinsic factor may be supplied with liver and vitamin B 11. In order to actually determine the value of liver

therapy, it is of value to do a repeated reticulocyte count, a procedure that is very simple and is much neglected since this is the first indication of an increased red cell formation. It was originally thought that in case of pernicious anemia it was necessary to supply the intrinsic factor to an excess of that needed to have a normal blood picture and in order to prevent neurological complications, but according to more recent work of "Grinker" and his associates the treatment of pernicious anemia has very little, if any, effect upon the neurological lesions, and considers any liver given in excess of that required to keep the blood picture normal as wasted. This, of course, does not apply to peripheral neuritis, a condition which is sometimes present and may be aggravated in any type of anemia, and it is quite possible that any of the subjective symptoms are often due to weakness caused by the anemia. Response to liver therapy cannot be regarded conclusive that the condition is pernicious anemia, since the same thing may be seen in pellagra and many other conditions. In pellagra the anti-anemic factor may be supplied in the form of Vitamine B 11. This anti-anemic factor may be given by mouth, intramuscularly, and in extreme cases may be given by the intravenous method.

Concentrated liver is probably the most commonly used, although it has been shown that autolyzed liver extract has three or four times the potency of the original substance. Ventriculin is also valuable. The choice of preparation is mainly determined by the economy and the personal experience of the physician. The dosage and frequency of administration is governed entirely by the severity and degree of response. The number of remissions and relapses may also affect the dosage, it being something that may be determined only by thorough observation over a long period of time.

The use of copper has been largely discontinued because of its toxicity and also because of the fact that the iron preparations are contaminated with this preparation. In most of the anemias the copper content of the blood is increased, and with the possible exception of anemia of in-

fancy its use has been largely discontinued.

The use of iron is of value in the hypochromic microcytic type, which includes many iron deficiency anemias. The cause may be due to the loss of blood, post-hemorrhagic anemia, defective diet, defective absorption or excessive demand for iron. The type of iron varies with the physician and the amount with the preparation. A reduced iron requires 45 grains daily, ferrous carbonate 60 grains, daily, both of these substances being insoluble. Two soluble substances are iron and ammonium citrate and ferrous sulphate, which requires 15 grains daily. I, personally, use ferrous sulphate because of its solubility and small dosage. There might be indications for green iron and ammonium citrate, intramuscularly, where iron is not tolerated by mouth; however, I have not used this and know very little about it.

Vitamin C should always be considered a therapeutic agent when there is a vitamin deficiency associated. Although I frequently do a tourniquet test, I have not as yet seen many cases where its use was indicated, except in well developed scurvy, a condition which we see rarely except in children and there, of course, the treatment is usually obvious.

Anemia due to thyroid deficiency is another type of mild anemia, and responds readily to thyroid therapy, although I have very little familiarity with this condition.

Dilute hydrochloric acid in a preparation to be used in cases where there is poor absorption of iron where there is achlorhydria.

Triple Primary Carcinoma In Otolaryngology

J. C. Drooker, Boston (Journal A. M. A., Oct. 9, 1937), presents a case in which it can be shown by microscopic proof that there occurred three separate and distinct primary carcinomas all situated above the thorax. The patient has survived all these three primary malignant tumors, one recurrence, and a grade three metastasis. He was seen May 20, 1937, and was found to be symptom free and showed no evidence of recurrence nine months since his last operation. So far as he has been able to find, it is the only reported case in which surgical, roentgen and radium therapy of three separate and histologically different carcinomas occurring within the anatomic scope of the rhinolaryngologist has survived. Treatment of a patient afflicted with multiple primary neoplasms should be carried out as if they were single carcinomas. In the case reported the requirements of Billroth concerning triple primary carcinoma are fulfilled.

THE JOURNAL

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McAlester, Oklahoma

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McAlester, Oklahoma

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Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

PRINCIPLES AND PROPOSALS OF THE COMMITTEE OF PHYSICIANS

The Board of Trustees has especially authorized the publication of the following statement:

Following the publication of the report of the American Foundation Studies in Government, a small group of physicians, assembled in New York, developed certain principles and proposals which have since been circulated by a self-appointed Committee of Physicians among the medical profession of the United States, with a view to obtaining signatures in their support. During a period of approximately six months, some 430 medical men have apparently permitted the use of their names. Early in November the self-ap-

pointed group of physicians released to the press for Sunday, November 7, a statement of principles and proposals to which the names of the 430 signers were affixed. The newspapers generally heralded this action as a revolt against the American Medical Association, in a great majority of the cases indicating that there was a revolt in behalf of "state medicine." The publication of this manifesto and the attached signatures has been heralded with glee by many of those who have been opposing the American Medical Association in behalf of cooperative practice, sickness insurance, and various fundamental changes in the nature of the practice of medicine. Within the last week another series of proposals has come from another self-appointed group requesting signatures of physicians. This series of proposals includes the suggestion for enabling legislation for sickness insurance.

The American Medical Association is an organization of physicians along strictly democratic lines. Representatives of county medical societies send delegates to state medical societies and these, in turn, send their delegates to the House of Delegates of the American Medical Association. It is possible for any physician, through his delegate, to obtain consideration of any proposal which he may wish to bring to the attention of the House of Delegates. At the Atlantic City session the delegates from New York State presented these principles and proposals, slightly modified, as an action of the House of Delegates of the New York State Medical Society. They were carried before a reference committee and, in several sessions of that reference committee, considerable numbers of physicians presented arguments for and against their adoption. The House of Delegates, however, after thorough consideration of the report of the reference committee, and with full cognizance of the method of development of these principles and proposals, and of the considerations which were involved in their passage by the House of Delegates of the New York State Medical Society, did not accept them. The House of Delegates did, however, point out the willingness of the medical profession to do its utmost today, as in the past, to provide adequate medical ser-

vice for all those unable to pay either in whole or in part.

Why, then, any necessity for the circulation of petitions presenting proposals for fundamental changes in the nature of development, distribution and payment for medical service? Is there a well designed plan to impress the executive and legislative branches of our government with the view that the American medical profession is disorganized, distrustful of its leaders, undemocratic in its action and opposed to the best interests of the people? Who may profit from such evidence of disorganization? Is there any evidence that the self-appointed Committee of Physicians and the 430 physicians who have affixed their names to these principles and proposals are any better able to represent the opinion of the American medical profession than the democratically chosen House of Delegates of the American Medical Association—one of the most truly representative bodies existing in any type of organized activity in this country today?

The House of Delegates has given its mandate to the Board of Trustees, to the officers and to the employees of the Association. That mandate opposes the principles and proposals emanating from the Committee of Physicians, and equally the new proposals. If the House of Delegates sees fit to depart from the principles now established, it will be the duty of the Board of Trustees, the officers and the employees of the American Medical Association to promote such new principles as the House of Delegates may establish. Until, however, the regularly chosen representatives of the 106,000 physicians who constitute the membership of the American Medical Association (now the largest membership in its history) determine, after due consideration, that some fundamental change or revolution in the nature of development, distribution and payment for medical service in the United States is necessary, physicians will do well to abide by the principles which the House of Delegates has established. They will at the same time deprecate any attempts inclined to lead the executive and legislative branches of our government, as well as the people of the United States, into

the belief that the American medical profession is disorganized.

Members of the medical profession, locally and in the various states, are ready and willing to consider, with other agencies, ways and means of meeting the problems of providing medical service and diagnostic laboratory facilities for all requiring such services and not able to meet the full cost thereof. The American Medical Association has reaffirmed its willingness on receipt of direct request to cooperate with any governmental or other qualified agency and to make available the information, observations and results of investigation, together with any facilities of the Association. Thus far, no call has come from any governmental or other qualified agency, for the cooperation of the American Medical Association in studying the need of all or of any groups of the people for medical service, to determine to what extent any considerable proportion of our public are actually suffering from lack of medical care. The offer still stands as evidence of the willingness of the American Medical Association to aid in finding a solution to any or all of the problems in the field of medical care that now prevail.

Editorial Notes—Personal and General

APPLICATION BLANKS are now available for space in the Scientific Exhibit at the San Francisco Session of the American Medical Association, June 13-17, 1938. The Committee on Scientific Exhibit requires that all applicants fill out the regular forms.

Application blanks may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn street, Chicago, Illinois.

THE OKLAHOMA INTERNISTS' ASSOCIATION will meet Thursday, January 6, 1938, at the Mayo Hotel, Tulsa, at 12:30 for a luncheon, after which Dr. Morris Fishbein, Chicago, guest speaker, will talk on "Medicine and the National Policy." For reservations write to Dr. F. Redding Hood, 1200 North Walker, Oklahoma City.

DR. O. L. PARSONS, Lawton, has been appointed County Health Superintendent of Comanche County, to succeed Dr. L. C. Knee of Lawton.

DR. H. K. SPEED, JR., Sayre, was named Medical Superintendent of the new Western Oklahoma Charity Hospital at Clinton, by the State Board of Affairs.

DR. CARL E. BUCK, Field Director, and MISS EDITH BOYD, Field Secretary, of the American

Public Health Association, New York, have set up an office in the State Department of Public Health for the purpose of making a health study in the state of Oklahoma.

DR. G. E. HARRIS, Hugo, has been appointed as County Health Superintendent of Choctaw County, to succeed DR. W. N. John, Hugo.

DR. FORREST S. ETTER, Bartlesville, has been appointed County Health Superintendent of Washington County.

DR. C. P. BONDURANT, Oklahoma City, was the guest speaker at the Pittsburg County Medical society meeting held at McAlester, November 19th. He spoke on "Common Diseases of the Skin," illustrating the numerous skin conditions by a large varied collection of lantern slides.

News of the County Medical Societies

LINCOLN County Medical society members were entertained by Drs. Carl H. Bailey and D. W. Davis, Stroud, with a turkey dinner November 10th. This was followed by a meeting with Dr. R. L. Murdock, Oklahoma City, as guest speaker, presenting a paper on "Diseases of the Proctodum and Colon." Dr. Bailey concluded the meeting with a discussion on "Therapeutic Animal Products Used in Medicine."

CARTER County Medical society met in Hotel Ardmore with about 75 doctors present from Carter and adjoining counties. A representative body of leading business men and teachers was also present to enjoy a most instructive lecture on "Food Fads and Fallacies" by Dr. Tate Miller of Dallas, Texas, "Syphilis: When Is It Cured?" by Dr. R. M. Adams, director of Venereal Disease Control, State Health Department, Oklahoma City, Okla. Both papers were received with much enthusiasm.

Discussions were by Drs. D. M. Higgins of Gainesville, Texas, G. E. Johnson, Ardmore, and R. M. Parish, County Health Physician.

Dr Miller held the audience spellbound with his wit and wisdom. More would have heard him if the dining room of the hotel had been larger.

The milk producers furnished the society with a lovely turkey dinner, milk, ice cream and all the trimmings. This was also appreciated and enjoyed by the society and we thank the Colvert Ice Cream Company and Mort Woods' Primrose Dairy. We also wish to thank Miss Minnie Dixon who furnished the piano music.

We regretted that our state president, Dr. Sam McKeel, was not able to appear on the program of this November meeting.

DR. G. E. JOHNSON,
Ardmore Secretary.

News Notes of Woman's Auxiliary

Following is report from the Auxiliary to the Oklahoma State Medical Association:

STATE OFFICERS

President—Mrs. Hugh Perry, 1914 South College, Tulsa.

President elect—Mrs. George Garrison, 508 N.W. 40th street, Oklahoma City.

Vice-president—Mrs. E. Eugene Rice, 2026 North Beard street, Shawnee.

Recording secretary—Mrs. Frank L. Flack, 1747 South Florence avenue, Tulsa.

Treasurer—Mrs. Walter S. Larrabee, 2738 East 22nd place, Tulsa.

Historian—Mrs. N. E. Duncan, Forgan, Okla.

Parliamentarian—Mrs. Edward D. Greenberger, McAlester, Okla.

PRESIDENTS OF COUNTY AUXILIARIES

Cleveland County—Mrs. R. J. Reichert, Moore, Okla.

Garfield County—Mrs. P. W. Hopkins, 423 West Pine, Enid, Okla.

Oklahoma County—Mrs. Henry H. Turner, 525 West 13th street, Oklahoma City.

Pittsburg County—Mrs. L. S. Willour, 6th and South, McAlester, Okla.

Pontotoc County—Mrs. S. P. Ross, 631 East 17th street, Ada, Okla.

Pottawatomie County—Mrs. E. Eugene Rice, 2026 N. Beard street, Shawnee, Okla.

Tulsa County—Mrs. James L. Miner, 2128 East 31st street, Tulsa, Okla.

Woodward County—Mrs. F. C. Camp, Buffalo, Okla.

STANDING COMMITTEES

Public relations—Mrs. H. Dale Collins, 600 N.W. 19th street, Oklahoma City.

Hygeia—Mrs. Marion Sheets, 508 South Buchanan street, Enid.

Press and publicity—Mrs. J. Fred Bolton, 212 East 27th street, Tulsa.

Student loan—Mrs. J. M. Byrum, 1702 North Broadway, Shawnee.

Organization—Mrs. D. H. O'Donoghue, 914 N.E. 15th street, Oklahoma City.

Program-health education—Mrs. J. L. Haddock, Jr., 112 University Place, Norman.

Printing—Mrs. Charles J. Woods, 1552 East 17th Place, Tulsa.

An Auxiliary to the Pontotoc County Medical Society was organized in June with fourteen (14) charter members. The executive board of the State Medical Auxiliary extends greetings and best wishes to this newest chapter.

MRS. FRED BOLTON,
Chairman of Press and Publicity.

OBITUARIES

GWEN WHELPLEY CRAWFORD, M.D., Fellow AMA, Bartlesville, Oklahoma; University of Arkansas School of Medicine, 1930; Aged 30; died, November 23, 1937, of a broken neck received in an automobile collision near Antlers, Oklahoma.

Control of Cancer Committee Meeting

The American Society for the Control of Cancer met in Oklahoma City, November 11, 1937.

Those attending the meeting were Dr. J. W. Cox, Southern Field Representative; Marjorie B. Illig, Boston, National Commander Women's Field Army; Mrs. W. M. Van Divort, Nowata, State Commander Women's Field Army; Dr. Ralph McGill, Tulsa, member cancer committee Oklahoma State Medical Association; Dr. Everett S. Lain, Oklahoma City, member state cancer committee; Mrs. G. K. Nusbaum, Enid, Vice-Commander Women's Field Army; Dr. Paul B. Champlin, Enid, member cancer committee Oklahoma State Medical

Association; William E. Eastland, M.D. Oklahoma City, member, and Chas. M. Pearce, M.D. Oklahoma City, member.

WRITTEN EXAMINATION

The American Board of Internal Medicine will hold its next written examination on Monday, February 14, 1938, in various centers of the United States and Canada.

The examination will consist of two sessions of three hours each with the morning session held at 9:00 o'clock A. M. and the afternoon session held at 2:00 o'clock P. M.

The candidates who are successful in this written examination will be eligible to take the practical examination which will be held in San Francisco the Friday and Saturday prior to the opening of the Annual Session of the American Medical Association in June, 1938.

The final date for filing applications for this written examination is January 15, 1938, and all applications should be in the office of the chairman before that date.

For further particulars and application blanks please address Dr. Walter L. Bierring, M.D., Chairman, American Board of Internal Medicine, Suite 1210, 406 Sixth avenue, Des Moines, Iowa.

Books Received and Reviewed

SYNOPSIS OF GENITOURINARY DISEASES by Austin I. Dodson, M.D., F.A.C.S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Cripple Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. Second Edition, 112 Illustrations. The C. V. Mosby Company, St. Louis, 1937. Cloth, Price \$3.00.

There is presented in this book a general, concise synopsis of the diagnosis and treatment of diseases of the genito-urinary tract. It is especially practical to the general practitioner because of its brief and condensed form, so arranged for quick consultation. It is very comprehensive and well illustrated.

METRAZOL IN DENARCOTIZATION

The cardio-respiratory stimulant, Metrazol, is receiving considerable attention not only for emergencies during anesthesia, but for denarcotization procedures following surgical operations.

The plan which is frequently used is to inject 3 cc. of Metrazol intravenously and 3 cc. intramuscularly immediately after the close of the operation. A smaller dose, 1 or 2 cc., is given in one-half to one hour and repeated one hour later if indicated. Usually this dose does not awaken the patient, but is given with the idea of restoring the reflexes, then allowing the patient to sleep through the pain zone with the surgical anesthetic acting as a post-operative analgesic.

According to Hogan (Amer. Jour. Surg., 38:340, Nov., 1937), "Metrazol is a milder, more uniform, more effective means of accomplishing complete aeration of the lung than the use by the individual of the carbon dioxide-oxygen mixture with the attendant dangers of over-stimulation and laceration of the smaller alveoli." Hogan has observed that often the excursion of the thorax is increased

before the intravenous injection of Metrazol is completed.

Further information on Metrazol and its use in combatting depression from barbitol derivatives, the opiates, asphyctic conditions, etc., will be sent upon request to the Bilhuber-Knoll Corp., 154 Ogden Ave., Jersey City, N. J.

"Benzedrine Sulfate" in Narcolepsy

Ulrich (N. E. J. Med., 217:696, Oct. 28, 1937) makes a second report on the treatment of narcolepsy with "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S.K.F.). Some of his patients have now had continuous treatment for nearly two years.

Seven of the ten cases of narcolepsy were complicated by cataplexy. All had complete or marked relief on administration of "Benzedrine Sulfate" in doses varying from 10 to 60 mg. a day, the average daily dose being 25 mg. In only one case was there an apparent tolerance developed. Cataplectic symptoms were particularly benefited, and did not reappear even after withdrawal of therapy.

No evidence of permanent deleterious effects or habit formation was found. Slight rise in blood pressure and basal metabolic rate was produced in some instances, but these effects were transitory. Anorexia and momentary discomfort were prevented by reducing the dose or changing the time of administration.

Two patients who suffered from obesity had an 11 per cent loss of weight with "Benzedrine Sulfate" in doses of 20 to 30 mg. a day. This effect was not observed in patients of normal weight.

Ephedrine was tried in three cases of narcolepsy, but was found to be of slight or no benefit. Dibenzy carbinamine, given to four patients, failed to relieve narcoleptic symptoms and produced gastrointestinal reactions, especially in large doses.

The author concludes that "Benzedrine Sulfate" provides the only satisfactory treatment for narcolepsy, but cautions against unsupervised use.

San Francisco American Medical Association Meeting June 13th—17th—1938

Members should write today if they contemplate attending the American Medical Association meeting in San Francisco this June and obtain their hotel reservations. See recent issues of the Journal of the American Medical Association giving list of San Francisco Hotels and rates. Send in your requests to Doctor Frederick C. Warnshuis, 450 Sutter Street, San Francisco, California, giving names of members of your party, type of accommodations desired, rates, date of arrival and departure.

The San Francisco Session promises to be an outstanding one by reason of the scientific program, scientific and technical exhibits and the social functions. In addition, there is the lure of California with its scenic beauty, majestic mountains, fertile valleys and historical background. An opportunity presents to combine profit of the program with the pleasures of visiting San Francisco, the Golden Gate City with the two bridges, engineering wonders of the world.

Come by train, boat, auto or plane—no matter how—but come. Your visit will ever be one of pleasant memory. San Francisco and the bay area medical profession anticipate the pleasure of being your hosts and cordially invite you to come to the San Francisco Meeting.

Watch the Journal of the American Medical Association for program features and events.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Pituitary Basophilism. A Review of 42 Verified Cases, with a Report of a Personal Case. By P. Brooke Bland and Leopold Goldstein, Philadelphia, Pa. *Surgery, Gynecology and Obstetrics*, November, 1937, Page 644.

The summary of this excellent article is a splendid abstract of the information it contains. The summary is quoted as follows:

1. The clinical course of a personal case of pituitary basophilism in a girl of 20 years old under observation for a period of three years is described. Osteoporosis and hypertension, two symptoms usually found, were not present in the case recorded. The patient made a pronounced improvement after receiving several courses of deep roentgen irradiation to the pituitary gland.

2. The special features of 42 verified cases of pituitary basophilism are tabulated and analyzed. A definite diagnosis of basophilic adenoma was made in 35 cases; an increase in basophilic cells was reported in one case. A chromophobe adenoma was successfully removed by operation in one case. In the five remaining patients, the pituitaries disclosed adenomas composed of chromophobe or eosinophilic elements.

3. Thirty-two patients were female, and 10 were male.

4. The most conspicuous clinical features of basophilic adenoma are as follows: (1) plethoric obesity, especially of the face, (2) hirsutism, (3) amenorrhea (impotence or loss of libido in the male), (4) cutaneous striae, (5) osteoporosis, (6) hypertension, and (7) glycosuria.

5. Other symptoms of prominence are: headache, asthenia, pains in the extremities, polyphagia, polydipsia, and symptoms referable to the cardiovascular and respiratory systems.

6. Death in the recorded cases was usually due to infections of various types or pulmonary complications. Patients with basophilic adenoma of the pituitary cannot withstand any type of infection, not even one of a minor nature.

7. Hypertrophy of the adrenals was an associated finding in 18 or 63 per cent of 29 cases in which the adrenal condition was described. In three cases definite adenomas of the adrenal were also present. The association of adrenal hypertrophy and adenomas is also encountered and has long been known to be a definite association of acromegaly.

8. Five patients were operated upon for suspected adrenal neoplasms and all died following operation. In only one patient was an adrenal tumor found to be present at the time operation was performed. Later at autopsy a minute basophilic adenoma was discovered in the pituitary gland.

9. Therapy for patients exhibiting the manifestations of Cushing's syndrome should consist in deep roentgen (high voltage) irradiation of the pituitary gland. Irradiations of high dosage should be employed (300 to 1,200 r units to each side of the head). This should be repeated every four to six months, if only slight or no improvement occurs. Patients with this syndrome apparently withstand large exposures of irradiation very well and show no ill effects.

10. Finally, the authors believe that patients with the clinical syndrome of pituitary basophilism should not be exposed to the risks of adrenal exploration, unless definite evidence of tumor is found, or repeated high voltage irradiation therapy has failed to bring about improvement.

The case history is rather completely given and a thorough study of the diagnosis and pathology is reviewed.

Comment: This is not a very common condition but it is here reviewed because pituitary basophilism, adrenal hyperplasia and tumors, and arrhenoblastoma of the ovary frequently arise in accurate differential diagnosis in patients who have amenorrhea and hirsutism. In such patients, who are uncommon, one must not only determine the presence or absence of one of the above conditions but must attempt a thorough differentiation of them because the therapeutic attack is entirely different, lying in (1) roentgen therapy for pituitary basophilism; (2) operative attack upon the adrenals for removal of tumor and extirpation of arrhenoblastoma of the ovary. X-ray treatment of the pituitary for pituitary basophilism and surgical extirpation for arrhenoblastoma of ovary produce excellent results.

Wendell Long.

A Case of Invagination of the Sigmoid through the Rectum and the Anus. (UN CAS D'INVAGINATION DU SIGMOÏDE A TRAVERS LE RECTUM ET L'ANUS.) By Charles LeFrancois. *L'Unoin Medicale du Canada*, Nov. 1937.

A woman 39 years of age came to the hospital because of an irreducible prolapsus of the rectum which had existed for two days.

Two years before there was a rectal prolapse which the patient was able to reduce without difficulty. Following that there was blood in the stool about twice a week. In connection with the difficulty, there was rebellious constipation, dull pains in the lower abdomen, loss of appetite and a loss of weight of 20 pounds.

On examination with the finger between the extruded bowel and the canal there was an absence of any evidence of a normal cul-de-sac. It was an invagination through the rectum, and was apparently caused by a granulating tumor that was seen on the summit of the prolapsed mass. During the manipulation associated with the examination the invagination was reduced, and the patient was greatly relieved.

Several days later a rectoscopic and a sigmoidoscopic examination did not reveal any evidence of

tumor. A radioscopy examination was requested. The radiologist reported: "Dolichocolon with ptosis of the transverse colon. Progression of the injected opaque material without difficulty, evacuation very incomplete."

Notwithstanding the negative findings it was decided to perform a laparotomy for the removal of the cancer that had been seen on the exterior portion of the mass at the time of the prolapse.

At operation there was a neoplasm about the size of a mandarin, about 18 inches from the rectum, with some enlarged glands in the mesocolon. There was a resection of about 10 inches of the sigmoid with immediate end to end closure.

At first the postoperative course was excellent, but about ten days after the operation there were evidences of obstruction thought to be due to an abscess that had developed about the anastomosis. The patient was given injections of "hypertonic serum" (presumably hypertonic sodium chloride solution). This was followed by great relief, and the patient was out of bed 20 days after the operation, practically well.

The pathological report was: "Epithelioma, cylindrical of the large intestine with inflammatory reaction in numerous lymph glands of the mesocolon."

Eighteen months after the operation the patient had gained 20 pounds in weight, and was apparently well.

The author remarks that colo-rectal invagination is pretty rare. In 1911 Elliot and Corcadan collected from the extant literature the histories of 11 cases. In 1925 Guellette was able to collect from the literature about 18 cases. Since 1925 only three other cases have been published.

It is remarked that in the cases of intestinal invagination encountered in babies and children 90 per cent are "primitive." In the adult the invagination is secondary or consecutive to a Meckel's diverticulum, a foreign body, or a tumor of the intestines, "and thus invagination of the sigmoid through the rectum is nearly always due to cancer of the sigmoid."

LeRoy D. Long.

Postoperative Thrombosis and Embolism. By Fred-eric W. Bancroft, Margaret Stanley-Brown, & Erwin Chargaff, New York. *Annals of Surgery*, November, 1937, Page 868.

"There is no greater tragedy in surgery than to have a patient who is apparently convalescing normally, either die in his sleep about the tenth day postoperative, or just as he is preparing to go home, suddenly have an attack of shortness of breath and expire."

No real attempt has been made to see if there is some underlying factor that makes some patients more susceptible to this condition than others. The present report comes from work done at Presbyterian Hospital and at the New York Hospital, the two great medical centers in New York City.

The authors are confident that the physical factors accepted by most authors; namely, dehydration, stasis, infection and trauma, are the main causes of postoperative thrombosis, thrombophlebitis and embolism.

They also feel that there must be in addition to the above factors, a biochemical change in the blood which precedes and accompanies thrombophlebitis and embolism, because all of the physical factors may be present in certain patients and no accidents occur, while in other patients the minimum number of the physical factors may be present and an accident result. They proceed on

the theory that where there is hyperactivity there is also hypoactivity. Some people have definite bleeding diatheses, such as can be found in hemophilia, certain purpuras and obstructive jaundice. If there are potential bleeders, why cannot one assume there are potential clotters? The investigators proceeded on the theory that this might be true and they immediately started to make a careful analysis of the blood factors involved in clotting before a thrombus occurs. They accepted the following theory of blood coagulation: Prothrombin plus calcium plus thrombokinase creates thrombin. Thrombin, when combined with fibrinogen, gives fibrin, or clotted blood.

The above named factors are the main activators of blood clotting, and it may be said that the only inhibitor of blood clotting which so far has been isolated from the human body in a recently pure state is heparin.

Since 1934 the investigators have examined patients routinely preoperatively and five and nine days postoperatively. They are obviously unable to tell preoperatively what patients are apt to have an accident, and the five and nine day postoperative are, in general, the danger periods. They rely on the tests for prothrombin and fibrinogen. The prothrombin test, which was simplified by Quick, is a simple one and can be performed in any laboratory. The fibrinogen test is somewhat more complicated. So far the authors have not been able to simplify the analysis so that only one test need be utilized in order to give a true index of the patient's bleeding and clotting tendencies. The prothrombin test, designated by the authors as the plasma clotting index, is more indicative of clotting tendencies wherein infection is at a minimum, while the fibrinogen test, when high, suggests infection and the likelihood of thrombophlebitis.

Their study of the prophylactic regimen against thrombosis and embolism made them conscious of certain postoperative therapeutic measures which they mention as follows:

1. "In abdominal cases every effort should be made to reduce the postoperative nausea and vomiting in order to keep the abdominal wall and field of operation quiet. The Levin tube, inserted through the nostril when the patient is conscious, is routinely introduced wherever vomiting occurs to any degree."

2. "Early exercise of the extremities is advised in order to prevent venous stasis."

3. In their opinion, tight abdominal dressings should be eliminated. Some dressings tend to compress femoral vein as it passes beneath Poupart's ligament. They make the following statement: "As distention is a factor in increasing abdominal pressure, and therefore venous stasis, we believe that food should be given early."

4. Dehydration. "Even in uncomplicated cases the excess of fluid loss from the body over the fluid intake in the first 48 hours postoperative is tremendous. If vomiting persists and the temperature is high, dehydration occurs very rapidly." They strongly advise intravenous administration of fluid until patient is able to take an adequate amount by mouth.

If the examination of the blood taken either pre- or postoperatively shows a high plasma clotting index and a high fibrinogen content, they place patients on a carbohydrate and fluid diet, limiting their fats and proteins. They have shown to their satisfaction in dogs and humans, that this diet, which for the sake of convenience they call a bleeding diet, will diminish the bleeding factors, while a diet rich in nucleoproteins and fats will

cause marked increase. In addition they advise the administration of sodium thiosulphate.

The blood of 920 cases was examined. Of these, 111, or 12 per cent, showed high clotting indices. Only 46 per cent of these highs received prophylactic treatment. In the treated groups no accident occurred. In the untreated group nine accidents occurred.

This is a most interesting and profitable investigation which has already yielded valuable information concerning this most dreaded accident in surgery.

LeRoy D. Long.

True Branchiogenic Cyst and Fistula of the Neck.
By Herbert Willy Meyer, New York. *Archives of Surgery*, October, 1937, Page 766.

In this article there is an interesting report of the case of a boy nine years of age who, "was born with a small opening on the lateral side of his neck just in front of the sternocleidomastoid muscle and just below the angle of the mandible, on a level with the hyoid bone. It was first noticed when he was five months old, when it was an opening the size of a pinpoint. The mother stated that colorless matter came out. A swelling developed below the left ear, and when the boy was 18 months old the swelling was lanced by a physician. It subsided, and the wound closed. After this at intervals the swelling would recur and open by itself, and a discharge would come through the previous incision. Three or four times in the next few years it was necessary to lance the swelling. When the boy was four years old it recurred worse than before, and he was operated on by another surgeon, who tried to dissect out the tract. Apparently, from the description as given by the parents and Dr. Tumen (who referred the patient), at this operation an opening was made into the trachea, and the operating surgeon believed that the tract was connected with the trachea. The wound finally healed, but the same sequence of events continued for the next five years, until the present time."

Dye injected into the fistulous opening went upward in the direction of the tonsillar fossa. There was a preoperative diagnosis of probable lateral cyst and fistula of the neck, a remnant of the pharyngothymic duct, and it was felt that at operation one would "probably find the tract running upward toward the tonsillar fossa, and entering the pharynx through the bed of the removed tonsil or close to the posterior pillar."

At operation the fistulous opening was found to be "circumscribed, and the infiltrated tissue surrounding the fistulous tract was dissected free from the sternocleidomastoid and the platysma myoides muscle." The tract did not run toward trachea.

"There was an infiltrated area that passed upward and somewhat posteriorly toward the ear, but it could not be easily dissected free." It was found that the principal portion of the tract passed upward and somewhat inward into the jugular fossa. Contrary to what was expected it curved upward and backward to the apex of the jugular fossa. It was adherent to the styloid process. In removing it it was necessary to remove the tip of the styloid process. Recovery followed the operation.

There is a discussion of the embryology, based, principally, upon the investigations of Wenglowski. The author refers to the fact that in an article entitled, "Congenital Cysts and Fistulae of the Neck," published in the *Annals of Surgery* in 1932, he had discussed the details of the embryologic de-

velopment of the branchial apparatus and of the anlage of the thymus.

In this article there is a brief, but very concise and instructive discussion of the embryology.

In this connection, the following quotation from the article is of significant importance: "The branchial apparatus belongs to the head and not to the neck. Any congenital pathologic condition referable to the branchial apparatus in a human being must rest along the lower jaw and around the hyoid bone and the cornu of this bone. Nothing below the lower level of the hyoid bone has any genetic relation with the branchial apparatus. All congenital anomalies caused by incomplete retrogression of the branchial apparatus must be located in the region around or above the lower border of the hyoid bone. Any congenital anomaly below this level is in definite relationship with the pharyngothymic duct and must be classified as a lateral cyst or fistula originating from the pharyngothymic duct."

LeRoy D. Long.

EYE, EAR, NOSE AND THROAT

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Injuries of the Frontal and Ethmoidal Sinuses with Special Reference to Cerebrospinal Rhinorrhoea and Aeroceles. Hugh Cairns. London. *The Journal of Laryngology and Otology*, September, 1937.

A problem of interest is the prevention of intracranial infection and the treatment of cerebrospinal rhinorrhoea following injuries to the frontal and ethmoidal sinuses.

The author divides the cases of cerebrospinal rhinorrhoea into groups.

Group one includes fractures into the frontal and ethmoidal sinuses. The acute state. A head-on blow is most likely to produce this condition. The most dangerous lesion is the fracture of the cribriform plate, for usually a tear of the overlying dura mater accompanies it. When the frontal sinus alone is fractured, the risk of cerebrospinal rhinorrhoea and intracranial infection is not so great. Cairns' illustrative cases are reported in detail as to findings, procedure and termination. His first case is a fracture of the frontal sinus without intracranial complications. This was a severe fracture with recovery. His second case is a fracture of the frontal sinus, cerebrospinal rhinorrhoea and subdural aerocele. Spontaneous recovery. The third case is that of an aeroplane accident that had a severe fracture of the facial bones, cerebrospinal rhinorrhoea, maxillary sinusitis, mastoiditis and recovery. Then three cases are shown from the London Hospital that show the picture not so rosy. Case four is a compound fracture of the cranial vault, comminuted fracture of the anterior fossa of the cranial base, laceration, local purulent meningitis, abscess of the right frontal lobe and death. Cases five and six are examples of fatal meningitis as an immediate sequel of fracture of the cribriform plate. This is by far the most dangerous fracture as regards intracranial infection.

Group two shows the delayed complications of fracture into the frontal and ethmoidal sinuses. Group one showed the immediate effects of fracture, while this group shows complications that may occur at a later stage. Case seven is a fracture of frontal sinuses, injury to right optic and both olfactory nerves, subsequent development of right frontal aerocele and cerebrospinal rhinor-

rhoea, operation-evacuation of intracerebral air and closure of dural tear and recovery. The injury was the result of the patient colliding with a van while riding on a motorcycle. The cerebrospinal rhinorrhoea started 11 weeks following the accident. At no time did he have an elevation of temperature suggestive of meningitis. The operation (under local anaesthesia) was necessary to remove the air to stop the rhinorrhoea. The pyramidal signs of paralysis gradually disappeared. The entry of the air into the brain approximately 11 weeks following the accident was probably due to blowing the nose and sneezing. Case eight was a fracture of the frontal sinus, purulent meningitis and intracranial aerocele following a cold three years later, drainage of the frontal sinus and recovery. The accident occurred three years before he entered the hospital suffering from meningitis. The patient had been in a motorcycle accident and was unconscious for two weeks at that time. During the three years he had many colds and headaches. His present illness accompanied a cold, lachrymation and nasal discharge. Case nine was a fracture of the cribriform plate of the ethmoid, abscess of the brain and purulent leptomeningitis two years later and death. Post mortem showed evidence of a recent infection of the paranasal sinuses spreading into the leptomeninges and into the brain at the site of the old fracture.

Group three includes operation injuries which occur during the course of operation such as trans-frontal craniotomy, opening the sinus when operating on pituitary or suprasellar tumors, etc. Case ten was a Chronic Pan-sinusitis. Operation: Trans-nasal drainage of the right antrum and right ethmoid cells, cerebrospinal fistula, subdural haematoma, leptomeningitis and death. Case 11 was a chronic pan-sinusitis and asthma, operation, trans-nasal drainage of right sphenoidal sinus, perforation of the cribriform plate, cerebrospinal rhinorrhoea, diffuse leptomeningitis and death. Case 12 was a mucocele of the right frontal sinus, operation, removal of mucocele and drainage of sinus, cerebrospinal fistula and spontaneous recovery.

Group four includes cases of spontaneous cerebrospinal rhinorrhoea. The causes of this condition are usually due to (a) hydrocephalus with slowly growing intracranial tumor in any situation; (b) frontal and ethmoidal osteomas; and (c) pituitary tumor. Here are shown two cases with X-rays of congenital deficiencies of the cribriform plate. With increased intracranial pressure a cerebrospinal rhinorrhoea may result.

Group five includes injuries of the sphenoidal sinus. These are not so common. Case 13 is one of an expanding intrasellar lesion, head injury, sella and suprasellar aerocele and spontaneous recovery.

The author has a comprehensive conclusion. Many X-ray pictures accompany the article illustrating various phases of the cases. There is a bibliography.

The Dowling Treatment.—Thirty Years of Observation and Results. Irving J. Dowling, M.D., F.A.C.S., Albany, New York. *The Eye, Ear, Nose and Throat Monthly*, November, 1937.

Dowling explains his technic minutely with drawings and words. He reports good results. As a result of having treated several thousand patients by this method he comes to the following conclusions.

1. Silver colloids are of distinct value in the local treatment of both acute and chronic sinus diseases.

2. The best method of employing colloidal silver

preparations in the treatment of sinus disease is by means of nasal tampons according to the Dowling method.

3. Clinical experiments and observations during a period of over 30 years accords Argyrol first place because of its positive remedial value in treatment, and, because of its unique and positive value in determining the presence of pathogenic infections within the nasal chambers and accessory sinuses in spite of negative radiograms or other negative findings.

4. Positive Dowling reaction in the presence of symptoms unrelieved by treatment is sufficient evidence to warrant operation, even though X-ray findings are negative.

5. Argyrol tampons are a valuable aid in treatment and through their use a near approach to sterility may be attained preparatory to many intranasal or sinus operations.

6. As a postoperative procedure, much intranasal or sinus surgery of doubtful issue may be rendered successful.

7. Acute rhinosinusitis uncomplicated by chronic pathology is readily cured in from one to several treatments conducted over a period of from one to four or five days.

8. Chronic pathology obstructing the nasal meatuses and blocking the drainage and ventilation of the sinuses is so influenced by nasal tampon treatment that normal drainage and ventilation of the sinuses is obtained, thereby avoiding operation in many cases; or where surgery is necessary, making it possible to attain success by less radical procedures than may at first have seemed necessary. In addition, an interval operation is made possible in cases of recurrent sinus attacks, making more likely successful issue in cases of this trying character.

9. Headache. — The daily early morning headache, the vacuum headache, and the "Sluder syndrome," all so diagnostic of sinus disease, are readily overcome, providing the pathology is not typically of surgical nature.

10. Both the Eustachian tubes and lachrymal canals are so readily benefited, that dilation of these canals is rendered less difficult and the beneficial results more permanent.

11. Eyes.—Many inflammatory diseases of the eyes exhibit a quicker response to treatment if the usual recognized treatment is supplemented by nasal treatment of the sinuses.

12. Asthma.—Acute asthmatic attacks oftentimes may be controlled for the time, by the Dowling method without the aid of other measures. The Haseltine-LaForge treatment, than which no more successful treatment has yet been devised for chronic bronchial asthma, includes the proper use of nasal tampons saturated in 10 per cent Argyrol solution.

13. Aggravations of varied kind and severity are possible from the use of Argyrol tampons, but such effect does not contraindicate their use. These unfortunate effects excited by the treatment are most apt to occur in women immediately before, during, or soon after the occurrence of the menses.

Allergic Diseases of the Ear. Dr. L. W. Dean, Dr. J. S. Agar, and Lloyd D. Linton, B.S., St. Louis. *The Laryngoscope*, October, 1937.

Many authors are mentioned in the review of allergic lesions of the ear. Hansel has the most complete review. He states: "In allergic individuals it is quite impossible to make a diagnosis of allergic otitis media unless a marked predominance

of eosinophils is demonstrated in the aural discharge."

The Meniere symptom complex is discussed by Hansel, i.e. vertigo, deafness and tinnitus. Dean et al. found that about 20 per cent of their cases of allergic rhinitis had ear symptoms, including the Meniere symptom complex. Those who had a Meniere symptom complex had severe types of allergy.

Interesting symptoms of allergic patients in order of frequency are given in Table I. They appeared during allergic attacks or when allergic tests were being made. The symptoms are: stuffiness or fullness of ear or ears; subjective loss of hearing; shooting or dull pains in ears; itching or sensation of something crawling deep in ear; continuous high pitched tinnitus; vertigo; nausea (especially when ear reactions are precipitated by a leukopenic index test but also independent of this); extreme nervousness and irritability; hyperacusis; syncope. Skin tests did not produce symptoms, while mucosal tests, leukopenic index tests and contact or ingestion of the proper allergens did.

In Table II there is given subjective symptoms resulting from a positive leukopenic index finding. They are: itching of the ear; fullness in the ear; pounding in the ears; ears feel blocked; earache; feeling of pressure in the ear; feeling of tightness and of drawing about the ear; the ear feels swollen; nausea and dizziness; decreased hearing.

There appeared to be not any connection between the severity of the symptoms and the appearance of the drumhead. With adrenalin all ear symptoms were controlled, except tinnitus. This was improved. One case is here reported of the tinnitus disappearing under allergic treatment. In this report of allergic cases, it was found that the tinnitus of the allergic patient was not always due to an allergy. Loss of hearing was usually in the lower tones as confirmed by the audiogram. Patients with chronic middle ear changes did not show improvement. The authors state: "Characteristic of deafness due to allergy is a variation from day to day, from week to week, and from year to year without objective changes in the tympanic membrane." The itching mentioned is always deep and the patient may also complain of an itching in the roof of the mouth.

The authors have divided their reported cases into groups recognizable by different groups of symptoms constituting a syndrome. Group one includes the Meniere symptom complex or a crisis of the VIIIth nerve. Three cases are shown in the group. Group two includes those with Meniere's symptom complex with unconsciousness. One case is detailed in this group. Group three comprises the largest group; characterized by decrease in hearing with a positive Rinne; sensation of fullness in the ear, usually itching, earache, tinnitus and sometimes, vertigo or nausea, or both. Two interesting cases are detailed in this group. Group four is characterized by migraine and ear symptoms. One patient is reported for illustration.

Allergic rhinitis has a common complication, otitis media. This is prevalent during inclement weather. During the two year study of the authors they have encountered few acute otitis media complications. Recurring attacks of acute otitis media in the presence of an allergic condition produce the same untoward effect on the hearing as those due to adenoids.

An acute otitis with allergic rhinitis yields to the usual treatment of a mild injection, while an acute allergic sinusitis yields only to allergic treatment. Prevention of the acute otitis is to control

the allergic rhinitis and the eradication of the resulting vasomotor rhinitis.

An extensive bibliography accompanies this report.

Retinitis of Pregnancy. Lieut.-Col. Sir Jamshedji N. Duggan, Kt., C.I.E., O.B.E., D.O. (Oxon.) V.K. Chitnis, D. O. (Oxon. and Bom.), M.B., B.S. (Bom.), F.C.P.S. *British Journal of Ophthalmology*, November, 1937.

The Sir C. J. Ophthalmic Hospital in the past three years has had several cases of retinitis of pregnancy and three interesting cases are here reported. All three were Mahomedans.

The first case was age 25, para 3. Her chief complaint was a failing vision in both eyes. The pregnancy was of seven months duration. Soon after her vision began to fail, she developed an oedema of both legs. She could only count fingers at four to six feet. Fundus picture was a well-developed neuro-retinitis with exudate and oedema in the retinal tissues, well-marked, soft edged cotton-wool patches were present. Detachment of the retina was present downwards and inwards in both eyes. Eliminative treatment was advised. Labor was induced. Immediately the patient began to feel better and the toxic symptoms began to disappear. Fundal exudates rapidly disappeared and the retina re-attached itself in both eyes with marked improvement of vision.

The second case was age 35, para 4. In her seventh month of pregnancy she developed such signs as toxæmia, insomnia, headaches, pain in the præcordial region, fever and cough; B. P. 230-160. B. P. after induced labor was 168-116. A week or ten days after labor was induced she had her first fundus examination. A tentative diagnosis was made of neuro-retinitis, probably of renal origin. Three weeks later another fundus examination was made, which showed arteries silver-wire; right-star figure present macula and left a few hard dots; veins tortuous and irregular calibre; secondary atrophy showing sings of approach; dark brown pigment patches (probably absorbing hemorrhages). There was no detachment of the retina. After induced labor her vision improved (she gave a history of dimness of vision with two previous pregnancies). This was an atypical case of retinitis of pregnancy. It was probably primarily a chronic nephritis, which makes for a graver prognosis.

The urine in the two previous cases was that of a nephritis. The urine of the third case was normal. The third case was age 24, para 4. Only the right eye was affected. The retina was opaque with some of the exudates still having soft-edged wooly characteristics. The disc appeared to be almost enveloped by them. There was no detachment of the retina and no hemorrhages. B. P. 90-65. She was seen one month after termination of the pregnancy for her impaired vision in her right eye.

All three cases had had previous pregnancies. Symptoms of the retinitis appeared in about the seventh month of pregnancy. Wasserman was negative in all three cases. The first case was undoubtedly directly due to toxemia of pregnancy; the second case had her chronic nephritis aggravated by toxemia of pregnancy; and the third case probably had the condition due to her toxemia (although examined late).

Sample's characterization of retinitis of pregnancy: "The sudden onset, the tremendous exudation into retina, the equally sudden cessation on removal of the cause if done promptly enough, the subsequent and complete restitution of visual

acuity, all are in marked contrast to the usual course of retinitis of other forms of Bright's disease."

The renal retinitis complicating pregnancy is associated with high blood pressure, both of which tend to persist in a lesser degree after delivery.

ORTHOPAEDIC SURGERY

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Fractures and Dislocations of the Cervical Spine, Sumner M. Roberts, M.D., Boston, Mass., Jr. *Bone & Joint Surg.* Vol. XIX, No. 1, Jan. 1937.

The author begins by explaining that a broken neck is not synonymous with "death," as many laymen think. Many injuries occur to the cervical spine, however, in which the cord is not damaged, or if damaged, only slightly, so that very good result may be obtained by proper treatment. Unfavorable sequelae, such as deformity and discomfort, may be prevented in most cases. Treatment of a fracture or dislocation of the cervical spine should be carried out the same as a fracture or dislocation of any other part, i.e. reduction should be accomplished as soon as possible followed by immobilization for a reasonable length of time. Symptoms of fracture may be from slight stiffness of the neck to more severe deformity. The physical examination usually reveals tenderness over the spinous processes of the injured vertebrae. There may be tenderness lateral to the injury and pain and muscle spasm are present. Peripheral nerve symptoms may or may not be present. These are due to compression of the nerve roots as they emerge from the cord. There may be hemorrhage anterior to the bodies with swelling in the pharynx and dysphagia. Extensive injury may damage the cord so that there will be minor paralysis on to more major forms on to complete paralysis.

Examination should first be made neurologically to determine the possible nerve damage. This is conducted with the patient lying down. In case there is no neurological disturbance the patient may then be examined in a chair. Never allow forward flexion of the cervical spine. Preliminary care is very important and should be carried out before a definite diagnosis is made by X-ray examination. Further injury should be prevented by head sling and traction.

In making the final diagnosis the history of trauma is important. Usually this is violent. Symptoms locate the injury more definitely, but do not differentiate between fracture and dislocation. Pain is an unreliable guide.

In the physical examination tenderness and the location of tenderness are very accurate, usually, in localizing the level of the lesion. There is less motion possible in a neck that has had a fracture than in the case of a simple dislocation. The roentgenogram is the most valuable asset and one on which the final diagnosis is made.

Treatment consists first in attempting to realign the bone as it was prior to fracture. Generally this is done by traction and hyperextension and the patient should be completely anesthetized for this. The neck should then be immobilized in a plaster cast. The author advises a plaster jacket extending around the head, cervical region and down to the crest of the ilia. Adequate space is cut out for the eyes, ears; space may be left on the top of the head; the arms are permitted full motion and a window is cut out over the abdomen.

The weight of the cast should be borne on the crest of the ilia.

The time of fixation with the plaster jacket varies according to the severity of the injury. For fractures of the spinous processes a fixation period of four to six weeks is sufficient. In more severe cases the fracture is next immobilized in a molded leather collar which fits around the thorax and up under the chin, well up over the occiput with a strap around the forehead. This is worn for a few weeks, followed by the simple Thomas collar which is worn until all support is discarded. The author immobilizes more severe cervical fractures up to at least six months, and gradual removal of the fixation is advised rather than removing a firm fixation to permit free motion. The author always advises exercises of the cervical region to be done while lying down, toward the last few months of immobilization so that when final immobilization is removed the muscles are strong enough to support the head.

In fractures of the vertebral bodies it is advisable to maintain strong hyperextension of the cervical spine for a period of five to six weeks in bed, followed by the plaster cast and then the molded leather support.

The author cites cases of fractures of the spines, the odontoid, the laminae, pedicles, and bodies, so that each is taken up and the exact treatment described.

Part two of this paper appears in the *Journal of Bone and Joint Surgery*, Vol. XIX, No. 2, April, 1937, by the same author, and primarily is on dislocations of the cervical spine.

The anatomy of the cervical spine is mentioned briefly, particularly in relation to the articular facets, which in the upper vertebrae are virtually horizontal and in this case a sheering or twisting force meets with no bone resistance except the odontoid process. As we approach the lower cervical spine, however, the articular facets are set more vertically so that dislocation is rare in this region.

The diagnosis of dislocation of the cervical spine is made similarly to that of fracture. There may be less injury, however, and the head is usually held in a characteristic position. In unilateral cases, for example, with a dislocation on the right, the head will be turned toward the left and tilted to the right. The explanation for this is that with the upper facets slipped forward on the right side so that it hooks over the lower facets, the riding forward turns the head to the left, while the process slipping off forward, allows the head to drop to the right. In incomplete dislocation the rotation of the head is present but the tilting is less pronounced. In bilateral complete dislocation the head is tipped forward without rotation. In this position of rotation or "torticollis," one must rule out such conditions as myositis, ligamentous strain, cervical adenitis, or any condition that may cause a spasm of the muscles of one side of the neck, especially the sterno-mastoid. Again X-ray makes the final diagnosis.

Treatment consists of immediate reduction of the dislocation, followed by plaster fixation as in any other injury of this type. In incomplete dislocation, hyperextension and traction are sufficient. In complete dislocation reduction may be accomplished under anesthesia. The anesthesia must give complete relaxation. Manipulation may be done after the method of Walton who described it in 1904. The author feels that the dangers of manipulation by skilled hands have been overestimated and that when done properly there is no danger and an excellent result can usually be obtained. Brute strength is not necessary. He does

not advise to attempt reduction of a dislocation in the presence of a fracture. The author has treated one case of dislocation ten months after the injury with marked improvement in the clinical findings, although there was very little improvement in the X-ray findings. In complete dislocations the head is held in plaster for two months, in leather collar for two months and in a Thomas collar for two months, as in fractures. In incomplete dislocations three months of immobilization will usually suffice.

Complications consist of delayed pain, which may come on in untreated cases, sometimes after weeks or months. Occasionally this occurs after treatment. Re-dislocations may occur, presumably due to too early removal of the immobilizing agent. Reduction should again be attempted, in such case with prolonged immobilization.

Open operation is indicated for three reasons: (1) an attempt to correct the deformity by open operation in case closed reduction has failed; (2) the spine is stabilized because of fear of recurring deformity. This is done especially in case of fracture of the odontoid in which there is delayed or non-union. (3) Where there is evidence of cord compression and requires a laminectomy to relieve this. Unfortunately this is the most common type necessary to do so.

A decision to do a laminectomy depends on whether there is permanent injury to the cord or not. Many times it is impossible to determine whether the injury has been simply momentary or is pressing on the cord prior to operation. In this case spinal puncture will reveal whether there is pressure on the cord or not. If there is a block then pressure is present at the time of the examination. In case the block no longer exists it is not necessary to operate.

The mortality in the series of 37 cases was seven or 19 per cent. Forty-two per cent died with compression fractures; two had slight dislocations, which probably played no part in the picture. Death occurred in 12 per cent of the cases of dislocation. One of the dislocation deaths was due to post-manipulative pneumonia, which leaves a mortality of six per cent actually due to the injury itself.

The author cites a number of cases and gives tracings of the roentgenograms of these cases.

Conclusions include the fact that fractures and dislocations of the cervical spine should be treated as other similar injuries, i.e. immediate reduction. Fractures are more serious than dislocations. Fixation after reduction must be complete and of long duration. Early complications cannot be avoided, but proper treatment begun early will lessen their permanent effects. Operation is rarely indicated except to relieve late cord symptoms.

Comment by the abstractors: It has been our privilege in the past two years to treat about eight such cases as the author describes. We feel that he is entirely right in his statement that early reduction must be accomplished. This can be done by a skilled operator with virtually no danger to the patient. After reduction, adequate immobilization is necessary. However, we feel that more operative intervention is necessary than the author indicates, in that many cases although apparently requiring nothing further than immobilization, will do better with simple fusion of the spinous processes. This gives better stability, very slightly limits the motion in the neck, and certainly reduces the danger of reinjury in this region. Furthermore, the period of immobilization can usually be lessened by this procedure.

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INTERNAL MEDICINE

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BY HUGH JETER, M.D., F.A.C.P., A.S.C.P.

Familial Shift to the Left of the Leukocytes (Pelger's Nuclear Anomaly of the Leukocytes), with Report of a Case, by Wilder Tileston, M.D., New Haven, Connecticut.

This is a report of an interesting case in which there is a familial shift to the left of the leukocytes. Literature is discussed and evidence is presented indicating or emphasizing the familial factor in this condition. It is suggested that the anomaly may even be of medical legal importance as regards questions of identity and paternity.

The Necessity of Certain Criteria For The Diagnosis and Cure of Rheumatoid Arthritis, By Russell L. Cecil, M.D., F.A.C.P., New York, N. Y.

The author stresses herein the importance of establishing certain criteria for the diagnosis of rheumatoid arthritis and also for the treatment. Diagnostic criteria are:

(1) **PATHOLOGICAL.** Gross pathological appearances of joints are not considered sufficient. Biopsies or histological studies are indicated in some cases. "A vascular granulation tissue containing collections of lymphoid cells which often resemble true lymphoid follicles, presents a picture which one never sees except in rheumatoid arthritis."

(2) **CLINICAL.** This is considered more important of all and the most characteristic finding is to be the fusiform finger. Multiplicity of joints involved is also important. The subcutaneous nodules are considered almost pathognomonic.

(3) **RADIOGRAPHIC.** In the very early stages there are no typical manifestations. Soon, however, the roentgen-rays begin to show the characteristic decalcification of the bones and the soft tissue swelling. As the disease progresses there is narrowing of the inter-articular space due to thinning of the cartilage, and blurring of the whole joint architecture. Several writers have stressed the peculiar punched-out areas, which are a prominent feature of rheumatoid arthritis, and occur just as frequently in this disease as in gout. In the latter disease, however, the punched-out areas are much larger than those in rheumatoid arthritis. In the final stages of rheumatoid arthritis the joint surfaces may become fused through fibrous or bony ankylosis, and in deformed joints there may be subluxation or dislocation. In the late stages hypertrophic changes may be observed, but this should not lead to confusion of the disease with osteo-arthritis.

Can a definite diagnosis of rheumatoid arthritis be made from the roentgenray pictures alone? In very early cases, no. In well established cases, yes, in a high percentage of cases. Occasionally, a gonococcal arthritis might be a source of error, but the anamnesia and other clinical data would prevent a mistake in diagnosis.

(4) **SEROLOGICAL:** Positive Streptococcus agglutination reaction is present in a higher percentage of cases of rheumatoid arthritis and should, therefore, be looked upon as one of the important diagnostic criteria.

In connection with suggestions for criteria of cure the clinical condition is emphasized. Sedimentation rate should be returned to normal. Specific agglutins should not be present, leukocytosis

should not exist and there should be no anemia and the natural tendency to exacerbations and remissions should be considered and the patient not be looked upon as cured until he has remained free of symptoms for at least one to two years.

Factors Influencing the Prognosis in Diabetic Coma, by Edward S. Dillon, M.D., F.A.C.P. and W. Wallace Dyer, M.D., Philadelphia, Pennsylvania.

In this report the authors have reviewed the results obtained in 3009 cases of diabetes treated in the Philadelphia General Hospital during the six year period of 1931 to 1936; 268 of these patients were admitted in acidosis and it is from the record of these that the report is made. There were 129 uncomplicated cases and 139 cases with complications. Of the 268 cases 36.6 per cent total mortality resulted. In the 139 cases with complications there were 105 cases with infection as follows: Respiratory system (except tuberculosis) 36, gastrointestinal system 14, genitourinary nine, skin and subcutaneous tissues 16, feet 16, miscellaneous five, pulmonary tuberculosis nine. Of the 34 non-infections, seven were coronary occlusion, six hyperthyroidism, four acute alcoholism, three cancer, two apoplexy, two hypertensive congestive failure and ten miscellaneous. Sixty-eight cases had postmortem examinations. A long list of patients dying "with" complications and another list of patients dying "from" complications are given.

The authors have previously published records of 16 cases in which the blood sugar was 1000 or above and in this report have added nine more such cases.

Interesting data concerning age, sex and color is given. Diabetic coma or conscious or unconscious groups were classified according to ability to arouse them sufficiently to answer "yes" or "no" to some simple question. The authors regard the importance of the mental state, the duration of the acidosis, the age of the patient and other clinical factors much more important in the prognosis than laboratory findings. However, frequent estimations of blood sugar and CO₂ determinations during the course of the acidosis are considered to be indispensable in properly gaging the doses of insulin and glucose in sufficient states.

The degree of leukocytosis seems to have been about the same in uncomplicated cases as in those in which complications were present. Blood urea determinations seemed to be of considerable aid in prognosis, the mortality increasing rapidly in those cases having 20 mgs. % or higher.

PLASTIC SURGERY

Edited by

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Pedicle Flap Patterns for Hand Reconstruction.
George Warren Pierce, M.D., F.A.C.S.; Gerald Brown O'Conner, M.D., F.A.C.S., San Francisco, California. S. G. & O. October, 1937.

The delicate hand balance with its multiplicity of synchronized motions is dependent upon the normal functioning of the numerous structures of the hand including the dermal covering. A disarrangement of any of these structures has a material effect on total and partial hand movements. We will concern ourselves in this discussion only with the coverings of the volar and dorsal surface of the hand and fingers, and the methods of repair.

In all serious hand injuries requiring dermal replacement, the damage is not confined to the skin alone but there is consequent destruction of the subcutaneous tissue. This being true, the ideal method of replacement is that which will supply a pattern of skin and subcutaneous tissue in one piece so that the optimum in hand function and appearance can be assured. From a practical viewpoint, however, under certain conditions one may employ substitute measures which will fill the needed requirements and give gratifying results. With this thought in mind it behooves us to compare the use and application of the three standard methods of hand coverage: 1. The split skin graft. 2. The Wolfe graft. 3. The pedicle flaps as they are applied to our problem.

Several general principles concerning pedicle flap patterns should be considered when their use is contemplated.

1. The usual donor areas for hand repair are the abdomen, lower chest, thigh, and buttocks; the selected site depending upon the tissue availability as well as the type of material needed and the location of the injured area.

2. A one piece pattern of the exact size, shape, and thickness will give the most efficient result.

3. All pedicles and flaps, when possible, should be made to conform with Langer's skin lines and the district blood supply.

4. Venous stasis due to the lack of a blood channel outflow rather than a deficient arterial supply is generally the offending cause when tissue necrosis occurs. Multipedicle flaps correct this venous deficiency.

5. Bipedicle or multipedicle flaps are more certain of a complete take than unipedicle ones and should always be used whenever there is any question present as to the viability of the donor material.

The question as to the use of more than one nourishing pedicle to the dermo subcutaneous pattern is an individual matter and depends upon the experience and judgment of the surgeon. However there are several situations that are better met by using multipedicles: (1) when it is necessary to cut across the blood supply and Langer's lines to obtain the necessary donor material; (2) when that area to be grafted is over 1 square inch; (3) for all flap patterns on the volar surface of the hand and fingers; (4) when the pattern of the area to be grafted is irregular; (5) for total finger or thumb reconstruction; (6) when it is necessary to reduce the subcutaneous tissue to a minimum to obtain the proper flap thickness; (7) when due to the mechanics of the hand and arm and unreasonable stress or strain is placed on the limb when it is connected to the donor area; (8) when due to malposition of the opposing areas (donor or recipient) undue tension or torsion is imposed on the pedicle or flaps.

The application and management of the grafted tissue are two other important phases of this form of reconstructive surgery. There are certain general rules to be followed if one expects to obtain the best end results.

1. The donor flap should be cut as a duplicate pattern of the denuded injured hand. This supplies sufficient covering material, keeps all the elements in the flap, including the vessels, under normal tension and in proper relation to each other, thus obtaining the optimum condition favorable to flap vitality.

2. There should be an absolute hemostasis of the recipient area and the donor flap. This prevents postoperative hematomas that are so de-

structive to grafts and stimulates circulation in the patent flap vessels.

3. Accurate approximation of the flap pattern to its bed eliminates dead spaces.

4. Exact apposition of the flap skin edges to those of its new position puts the flap edges under the best condition for early union by first intention and gives the eventual minimum in scar formation.

The time of severance of the blood supply to any of the pedicle flaps is entirely an individual problem. The average length of time for severing accessory pedicles is seven to ten days and it is not advisable in the case of a large flap pattern with many pedicles to interrupt too many at the first sitting. The average time for the severance of the terminal pedicle that makes the flap self-sustaining is two and one-half weeks. There are numerous things that influence the surgeons judgment as to the proper time to isolate the flap from its pedicle blood supply, such as (1) the rapidity of the take; (2) the size and circulation of the graft; (3) primary graft union; (4) presence or absence of infection; (5) number of nourishing pedicles; (6) the local conditions surrounding the graft; and (7) the general condition of the patient.

The pedicle flap pattern by its anatomical construction more closely fulfills the major reconstruction as a replacement tissue for all serious hand injuries requiring a covering; therefore when properly conceived and executed it gives the most favorable means for obtaining the acme in appearance and function. It is upon these considerations that we recommend its more general application in major hand injuries.

COMMENT

The authors have pointed out very clearly the technique of restoring skin to the volar and dorsal surfaces of the hands. The results obtained are excellent. Anyone seeing a hand which is denuded of skin can help by seeing that the skin is restored immediately especially in traumatic cases. If the loss of skin is due to a burn secondary to infection it is imperative to keep the hand and fingers in a position of maximum function.

It is almost impossible to restore function to a hand or finger if the subcutaneous tissues are fixed especially in extension. If the fingers and hand are held in semi-flexion then whatever reconstruction work is done there will be a more favorable framework position.

UROLOGY

Edited by D. W. Branham, M. D.
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Present Status of Nephropexy and End Results of Three Hundreds Eighty-Four Operative Cases. Charles Pierre Mathe, San Francisco, California. Urologic and Cutaneous Review, November, 1936.

The paper consists of a critical analysis of 384 patients treated for ptosis of the kidney by nephropexy.

The author has reviewed the history of nephropexy, commenting on the fact that the operation has fallen in disfavor in the past due to injudicious choice of cases. Of late, however, more and more urologists are finding it particularly applicable in certain selected cases.

Most of the cases analyzed were found to be in the younger age group, from the second to the

fourth decade; however, six children less than ten years old were operated. The symptomology of nephropexy varied in the majority from a dull lumbar pain or gastro-intestinal symptoms to actual renal colic with or without infection.

The author describes his own technic for nephropexy which consists of placing a triangular suture in the renal capsule on its anterior surface and two posterior sutures on the convex surface in such a manner that fixation of these sutures over the 12th rib places the kidney in its correct position. He also performs renal sympathectomy where pain is a prominent feature of the case.

The mortality from nephropexy was found to be 0.5 per cent. The results have been evaluated from relief of symptoms, improvement in drainage by postoperative pyelographic studies and elimination of infection. Ninety seven and four tenths percent of his patients were relieved of their trouble, 1.3 per cent were improved, and 1.3 per cent failures were found.

The author's conclusions were that nephropexy in conjunction with renal sympathectomy in properly selected cases is a successful operative procedure.

COMMENT

The author's results are certainly enviable for this type of operation. He doubtless has carefully selected his cases to attain this end. A personal opinion exists that nephropexy is occasionally indicated, especially in those cases where disturbance of drainage of the renal pelvis is present and probably in a few cases in which renal pain alone is found. Possibly the removal of the sympathetic nerve supply, thereby relieving spasticities of the upper ureter and pelvis do as much good as mechanical fixation of the kidney.

The Late Effects of Acute Pyelitis in Girls, Lawrence R. Warton, Damon A. Gray and Harriet G. Guild, Baltimore, Maryland, J. A. M. A., November 13, 1937.

This study consists of a follow up examination of thirty adult patients who in their childhood had had one or more attacks of pyelitis. The examination consists of history, physical examination, culture of urine, phenosulphonphthalein test, and intravenous urography.

Despite the fact that in only two instances were the patients in what would be called poor health, over half of the patients (57%) had demonstrable definite abnormalities in the urinary tract. The pathological changes consist of persistent bacteriuria, hydronephrosis, inflammatory changes in the renal pelvis and calices and two cases of stone formation. Three of the patients had borne children with but one having had pyelitis during pregnancy.

COMMENT

An extremely interesting observation that emphasized the importance of properly following up children who have urinary tract infection. The author himself comments that it is not necessary to cystoscope every child who has an infection but certainly several months after symptomatic recovery an intravenous urogram and study of the urine culturally for persistent infection should be done. One cannot determine by physical signs or symptoms alone whether residual lesions are present. Only by such observation may we prevent crippling disease of the kidneys later in life.

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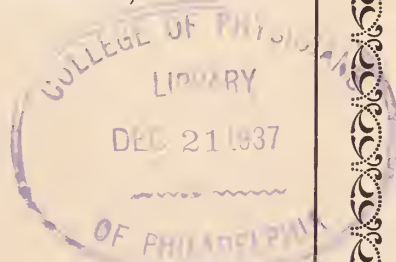
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